An Address
ON
GASTRIC HÆMORRHAGE AND ITS SURGICAL TREATMENT.

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MR. PRESIDENT.—I can assure you that I feel it a very high honour to be asked to give an address before so distinguished a society as the Edinburgh Medico-Chirurgical Society, and as the northern capital has for ages been such a stronghold of medicine I should almost have hesitated in venturing on another trespass of surgery had I not felt that the opinion held by many practitioners of medicine "that bleeding from the stomach, the result of ulceration, rarely proves fatal," required carefully reconsidering and the facts marshalling and looking at also from the surgical point of view.

Just as in other internal hæmorrhages, bleeding from the stomach was until quite recently a subject that so far as treatment is concerned only came under the notice of the physician, and it is only since the advances in surgery have demonstrated the feasibility and safety of exploring the abdomen that the question of the surgical treatment of hæmatemesis has been a subject that could be discussed with advantage in a mixed medical and surgical society. Were it desirable, the time at my disposal this evening would render it impossible to consider all the varieties of hæmatemesis. I shall therefore confine my remarks altogether to the most common and certainly the most important cause of gastrorrhagia, simple ulcer, leaving out of consideration the vomiting of blood from cirrhosis of the liver, cancer of the stomach, miliary aneurysm, aneurysm of the aorta and other vessels, purpura, scurvy, heart disease, leukæmia, typhoid fever, and other more obscure conditions only amenable to medical treatment.

When it is borne in mind that gastric ulcer occurs in 5 per cent. of the community and that according to Brinton, Habershon, Müller, Dreschfeld, Lebert, and others the mortality from all causes in all cases of ulcer is from 10 per cent. to 50 per cent. it must be at once allowed that the consideration of the subject is a matter that should claim the attention of the profession to a greater extent than it has hitherto done. Its importance will be better grasped if these figures are applied to the population of a city like Leeds which, for convenience' sake, I will take at 500,000. Of this number 25,000 persons may be supposed to have or to have had ulcer of the stomach and out of these, taking the mean estimate of mortality as 25 per cent.—though this is under the mean as given by the authorities named—6250, or 12,500 per 1,000,000, of the population may be expected to die from gastric ulcer or some of its complications. When it is fully grasped that many of the complications can only be dealt with successfully by surgical means and that even in the mildest cases of gastric ulcer some of the most serious complications, such as perforation and hæmorrhage, may suddenly supervene I think that my audience will agree with me when I express an opinion that physicians and surgeons should in the treatment of these serious cases be in closer touch and have a more perfect understanding so that valuable time may not be lost when surgical interference is required. At present I have no hesitation in expressing my conviction that the treatment of gastric ulcer, especially among the working classes, is altogether too careless and unscientific, and I feel sure that the out-patient treatment of such cases, whether in hospital or private practice, is absolutely wrong, and attended with great danger, either of sudden catastrophe from rupture or bleeding, or of the transformation of an acute into a chronic disease which can then only in the greater number of cases be set right by a surgical operation. I think that as soon as gastric ulcer is suspected, the patient should be told the serious nature of the disease and the uncertainty of cure without rest in bed and long-continued care in diet under proper medical supervision. If, then, from business or other reasons, the advice of the medical attendant is ignored, the blame rests on the patient and not, as at present is so often the case, on the slipshod method of aiming at relief and calling it a cure. Fortunately, the surgical treatment of chronic and recurring gastric ulcer and its complications is becoming more and more advocated, and with increasing experience more and more perfect, so that to-day the tale is very different to what it was even a year ago, when I gave a series of lectures on the subject from the Hunterian chair at the Royal College of Surgeons of England. I was then able to collect from all sources 188 cases of operation for chronic gastric ulcer, including 34 cases of my own, but excluding operations for perforation and hæmorrhage. Out of these cases, 31 patients died, giving a mortality of 16·4 per cent., but my recent experience in a largely extended number of cases shows barely a rate of 5 per cent., and as all the patients were either chronic invalids or ill unto death, that means a saving of life in 95 per cent. of the cases, either by gastro-enterostomy, gastroplasty, pyloroplasty, pylorectomy, or gastrolysis.

I must now confine myself to my special subject for this evening, the complication of hæmorrhage, which according to different authorities occurs in a greater or less degree in from 50 to 80 per cent. of all cases of gastric ulcer, and is, according to various authors, fatal when medically treated in from 11 to 3 per cent. (Müller, 11 per cent.; Welch, from 3 to 5 per cent.; Brinton, 5 per cent.: Debove, 5 per cent.; Steiner, 6·36 per cent.; Lebert, 3 per cent.; Dreschfeld, 3½ per cent.; and Rodman, 8 per cent.). If we take the average, 7 per cent. of deaths in cases of gastrorrhagia from ulcer will not be far from the truth. If this is worked out in the 500,000 population of a city like Leeds, it means that of the 25,000 persons who have or have had ulcer, 12,500 suffer from hæmatemesis, and of these 7 per cent., or 875, die. We are, therefore, dealing with a very serious and common accident, and one which a society composed of experienced physicians and surgeons such as are here assembled, can do real good by discussing.

The bleeding may be arterial, venous, or capillary, and curiously, capillary hæmorrhage may be so free as to render it difficult to say that some large vessel has not given way, yet after death a careful examination may fail to discover any gross vascular lesion. Although capillary hæmorrhage may supervene on other conditions, such as congested portal circulation, enlargement of the spleen, and general engorgement of the venous system, when general treatment will usually be all-sufficient, yet there are two special conditions in which the bleeding may be so free as to raise the question of surgical treatment: these are vicarious hæmatemesis at the menstrual period, and post-operative hæmatemesis. The former condition is well recognised and usually yields to medical treatment. Petersen's experience of surgical treatment in three cases terminating fatally after operation would not encourage surgical intervention unless the circumstances of the case were very exceptional.

In my Hunterian lectures I drew attention to post-operative hæmatemesis, of which I have seen several cases; three fatal. The cases occurred after operations for intestinal obstruction, tuberculous peritonitis, herniotomy, and gall-bladder operations. Other cases have since been reported; one by Dr. Winslow in a stout woman, aged 65 years, after operation for umbilical hernia, where death occurred from profuse gastrorrhagia on the third day, and at the post-mortem examination, though the stomach and intestines contained a large quantity of blood, no vascular lesion could be discovered; and another by Mr. C. W. Mansell Moullin in a young man, aged 23 years, who died from profuse hæmatemesis within 48 hours of a simple exploratory incision in the left iliac fossa. It was then neither generally recognised nor well understood, but since that time several papers have appeared on the subject both at home and abroad, and though now fully recognised its cause remains obscure. Herr Eiselberg tried to explain it as a result of injury to the omentum from several cases observed in the Königsberg Klinik occurring after hernia operations, after operations involving ligature of the omentum, and after torsion of the omentum. Although this explanation may serve as a cause it does not account for all cases, as proved by one of my own, in which a malignant tumour of the common bile duct causing jaundice and distended gall-bladder was operated on under cocaine, the distended gall-bladder being simply exposed through a small incision, stitched to the parietes and drained, without in any way exposing any other viscera, yet violent hæmatemesis set in the day after operation and proved fatal in three days. This case also disproves

two other theories that have been advanced—one that general anæsthesia is the cause, and another that sepsis affords an explanation, the latter being a theory advanced by Dr. Rodman in his oration before the American Medical Association in June, 1900. That sepsis was not the explanation in the only three cases in which I have had the opportunity of observing the condition after death is undoubted, for in each there was no sign of peritonitis or other septic trouble, and, moreover, there was no gross evidence of ulcer or injury to any vessel of sufficient size to be visible to the naked eye. The theory of sepsis is also negatived by recovery in the greater number of cases and by there being no sign of distension or of the other usual concomitants of septicæmia when it occurs after abdominal operations. The only explanation that seems to me at all feasible is that the hæmorrhage is dependent on a reflex nervous influence, and it is quite possible that this same explanation applies to vicarious hæmatemesis at the menstrual period; but it should also be remembered that slight erosion of the mucous membrane of the stomach sufficiently deep to cause severe gastrorrhagia may be almost imperceptible to the naked eye even when searched for carefully on the post-mortem table. Though serious, it is not necessarily fatal, and I have known several cases to yield to general treatment, such as high injections of hot water at a temperature of from 112° to 116° F., as advocated by Tripier, free purgation by calomel, the stopping of all mouth-feeding and the application of ice to the epigastrium, &c. In post-operative hæmatemesis operation can be seldom feasible or advisable, and Reichard's experience of operations followed by death in two cases would lead me in the future as in the past to rely on general rather than on surgical treatment.

Venous hæmorrhage, if from perforation of one of the large trunks such as the coronary, splenic, or portal, may cause rapid death, but owing to the diminished pressure in the veins and the more languid circulation a rapidly fatal result is less likely than in arterial bleeding, and should the hæmorrhage persist or recur such cases would be likely to benefit by surgical treatment.

Arterial bleeding is mostly responsible for the serious and fatal hæmatemesis due to gastric ulcer. The bleeding may be from the small arterioles which radiate between the peptic glands, from the trunks along the curvatures, the coronary being the most frequently affected, or from extrinsic arteries, the splenic alone being responsible according to Brinton for 55 per cent. of the deaths in fatal hæmatemesis. The following list of 54 fatal cases of hæmatemesis is taken from M. Savariaud's Thesis: Ulcerations of the splenic artery, 17 cases; ulcerations of the coronary artery, 6 cases; ulcerations of the pancreatico-duodenal, 7 cases; ulcerations of the gastric arterioles, 10 cases; branches of the coronary vein, 2 cases; other veins, 2 cases; vessel not determined, 2 cases; no vascular orifice visible, 4 cases; vessel not mentioned, 4 cases. The pancreatico-duodenal and right gastro-epiploic are the arteries chiefly affected in pyloric and duodenal ulcers. The peculiarly fatal nature of hæmorrhages from medium-sized arteries depends on the fact that an ulcer makes a lateral opening into the vessel which prevents natural hæmastasis by retraction and contraction of the artery, the whole force of the heart is then exerted on the clot which tends to form during the syncope that usually occurs when a large quantity of blood is suddenly poured out.

The interval between the first onset of bleeding and death is of great importance surgically and is well shown in the table from M. Savariaud's Thesis which is therefore worthy of note.

Vessel.	No. of cases.	Sudden death.	Rapid death.	Survived considerable time.
Heart	4	1	1	2 (three days).
Aorta	2	—	1	1 (10 days).
Hepatic	2	—	1	1 (10 days).
Splenic	17	3	7	7 (from two to eight days).
Coronary	6	1	3	2
Pancreatico-duodenal	6	1	3	2 (from eight to 15 days).
Arterioles	10	1	1	8 (from four to 15 days).
Small veins	4	1	1	2 (from seven to 11 days).
Invisible veins	3	—	1	2 (21 days).

This table shows that in the present state of our knowledge it is impossible to diagnose the size of the vessel perforated either from the amount of blood lost or the length of survival. A probable diagnosis of the site of bleeding may, however, often be arrived at in hæmatemesis from ulcer by a careful study of the previous history, especially with regard to the site of pain, the time of onset after food, and the influence of posture on it, as well as by the way in which the pain radiates. The situation of the tender spot, the presence or absence of tumour and of dilatation or contraction of the stomach also afford assistance. As will be seen later the diagnosis of the site of the ulcer and therefore presumably of the bleeding is of great importance from a surgical point of view and will influence both the advice given as to treatment and the method of procedure when the abdomen is opened.

TREATMENT.

From the fact that medical and general treatment is successful in arresting hæmatemesis in 93 per cent. of cases, and that it is difficult in the present state of our knowledge to say at first that the bleeding is not occurring from capillaries or small arterioles, it necessarily follows that medical treatment should always have a fair trial in every case of acute hæmatemesis. The very fact of medical treatment being so often successful in cases of apparently alarming hæmatemesis, goes to show that capillary oozing or bleeding from arterioles is much more common and accounts for many more cases of gastric hæmorrhage than has hitherto been supposed. But while thoroughly believing this we must also not close our eyes to the experience we have in general surgery of bleeding from medium-sized arteries, such as the radial or ulnar, which we know would rapidly bleed a patient to death, if only perforated on one side and surrounded by warm compresses, a condition that practically applies in all cases of hæmatemesis where the larger vessels are eroded. If, therefore, medical treatment and rest properly carried out are not successful in arresting the bleeding in a few hours, or if after being arrested it recurs, we should be driven to the conclusion that a large vessel is perforated, and if a surgeon has not been previously asked to see the case, I would say emphatically that a surgical consultation ought to be held with a view to considering the question of operation and immediate arrest of the bleeding by direct treatment if the patient is in a fit condition to bear it, just as would be the case if an ovarian artery were bleeding in a case of ruptured extra-uterine gestation, or a brachial or radial after an accident. The views which I am enunciating to-day are perhaps more pronounced and more emphatic than those which I expressed a year ago in my Hunterian lectures, this being the result of a much extended experience in the surgery of the stomach, a much greater success on all hands in the surgical treatment of stomach diseases and a careful study of more recent statistics.

An analysis of the table by M. Savariaud of 54 cases showing the prolongation of life in various fatal cases of hæmatemesis, demonstrates that in 10 out of 54 cases—that is in 18·5 per cent.—death occurs so rapidly that there is barely time to consider the question of surgical treatment, and that in 17 out of the 54 cases, which equals 31·4 per cent., death occurs within from 24 to 36 hours after the first appearance of hæmorrhage. Now, although at present these cases are often allowed to die without operation, yet if the bleeding were from a radial or tibial or any accessible artery they would all be saved by the simple operation of direct ligature of the bleeding vessel, which operation would also cure the bleeding stomach artery could it be readily found. The difference between the two is, however, not merely only one of accessibility, but also one of diagnosis, for if we are able to diagnose capillary hæmorrhage, the case will be generally one for medical treatment alone, but if the time arrives when we can diagnose with great probability arterial hæmorrhage from a large vessel the case will, I believe, be considered one for the adoption of surgical measures. Our efforts, both as physicians and surgeons, must therefore be directed towards making a diagnosis of the size of the damaged vessel, for if it can be asserted that in all probability a large artery has given way, an operation could be undertaken in an early stage of the case, before exhaustion and profound anæmia have supervened, with great probability of success.

Where there have been distinct signs of gastric ulcer preceding the hæmorrhage and where a sudden hæmatemesis has occurred with great loss of blood accompanied by an attack of syncope, a large vessel will usually be found to be

the source of the bleeding. In all such cases not speedily yielding to medical and general means surgical treatment will probably in the future be carefully considered and in some it will be followed out, for there can be no absolute rule formulated that will apply to every case and each must be considered on its merits. The present condition of the patient, the previous history, the surroundings, the possibility of skilled surgery and of good nursing and other circumstances will all help in the decision. Although both surgical and medical treatment in cases of fulminating hæmorrhage has so far yielded disappointing results, in the remaining 50 per cent. of fatal hæmorrhage where repeated bleedings occur and the interval between the first seizure and death varies from a few days to two or three weeks, medical treatment will have been fully tried and failed and there can be no question as to the advisability of surgical procedures being adopted.

At present with the exception of Dieulafoy, who advocates operation during the first bleeding if as much as half a litre of blood is lost, all other surgeons who have written on the subject agree that general means ought to be relied on during and after a first attack, as in from 93 to 95 per cent of cases such treatment succeeds, and until our means of diagnosis as to the size of vessel injured is rendered more reliable we must assent to this rule; but after a second bleeding I have no hesitation in advising operation even during the course of the hæmorrhage if the patient can stand it or as soon after as his condition will permit the operation to be done, for experience tells us that further hæmorrhages are almost certain to occur unless preventive measures be adopted. I saw a case of this kind last year which created a great impression on my mind. I was asked to see a single woman, close on 30 years of age, with a view to operation after a second attack of hæmatemesis, which had, however, ceased when I saw her, and as the patient, though anæmic, was apparently much easier and expressed herself as feeling well operation was deferred, and a third attack which occurred a few days later during my temporary absence from home proved fatal. In another case I operated during the third attack, found the bleeding vessel, and saved the patient. Doubtless the desirability of stopping bleeding from an ulcer of the stomach by surgical means must have occurred to many minds before being put into execution.

To Mikulicz, however, belongs the claim of having been the first to operate, on Feb. 13th, 1887, for hæmorrhage from a gastric ulcer, though Roux of Lausanne was the first to perform a successful operation, and that in a case of hæmorrhage from the coronary artery in which he excised the ulcer and ligatured the artery at both ends. In my Hunterian lectures I drew up a table of all the cases of operations for hæmatemesis I could then find. It included operations for post-operative and vicarious hæmorrhage, cases not associated with ulceration and all ending fatally. Excluding these and correcting Hartmann's series it would give 26 cases of acute hæmatemesis with 14 deaths and 19 cases of chronic hæmatemesis with two deaths; otherwise a mortality of 53·8 per cent. in acute and of 10·5 per cent. in chronic hæmatemesis treated surgically. A more recent table has been drawn up by Dr. Rodman[1] in which he has collected 32 operations for acute gastrorrhagia with 13 deaths, or a mortality of 40·6 per cent., and 31 operations for frequently recurring, or so-called chronic, hæmorrhages with six deaths, or a mortality of 19·3 per cent., and even since that list was drawn up other operations have been performed. This mortality is very high, but it must be remembered that in every case medical treatment had been first tried, and in many of the cases probably over too long a period before operation was performed; for instance, in one of my cases in which I operated successfully during the third seizure the blood seen at the operation was so diluted and thin as to be more like water tinged with blood than blood itself, yet the bleeding was still going on. Moreover, it is to be remembered that gastric surgery is advancing in safety and efficiency by leaps and bounds and will before long I feel sure, be one of the most satisfactory branches of the surgeon's work.

TECHNIQUE OF OPERATION FOR GASTRORRHAGIA.

On account of the fear of exciting fresh hæmorrhage, it is undesirable to wash out the stomach before operating on a bleeding ulcer, and as the patient is usually anæmic and will therefore bear shock badly it is desirable to have him enveloped in cotton-wool or otherwise kept warm on a heated table and to give him a subcutaneous injection of strychnine before operation. If it be unnecessary to infuse saline fluid before the operation an assistant should be ready to perform that duty while the abdominal operation is being proceeded with should it be called for. After the abdomen is opened the stomach may be emptied by pressing the contents into the duodenum, as suggested by M. Terrier. This saves much time, and rapidity is of great importance. The surface of the stomach should then be carefully examined, as very frequently a puckering of the surface or thickening of the coats will be noticed at the site of the ulcer, or a difference in colour may sometimes indicate its site. Should the operator be fortunately able to find these indications much time may be saved, but if no indications of this sort be obtainable, the stomach must be drawn well forward and opened either by a vertical incision, which gives less hæmorrhage, or by an incision in the long axis of the stomach, which affords a much better view of the interior. In order to avoid soiling the peritoneum, thin flat sponges should be placed within the abdomen and it is well to have a perforated sterilised gauze pad covering the stomach, the opening to correspond with the opening in the stomach. The edges of the stomach should then be held open by forceps, one above and below and one at each end.

The interior of the stomach must now be systematically examined; first the anterior and posterior surfaces, then the upper and lower curvatures, and lastly the pyloric and cardiac orifices, all of which can be done by the naked eye or by the aid of an electric cystoscope or a reflected light. If the posterior wall of the stomach cannot be efficiently examined a slit may be made in the omentum and two fingers, or even the whole hand, pushed through it and employed to invaginate the posterior wall. If no ulcer can be found on the wall of the stomach the duodenum should be explored, not only by the finger but by invagination. If no ulcer be found anywhere and the bleeding proves to be capillary or from small undiscoverable ulcers, gastro-enterostomy should be performed, but if an ulcer be discovered and it be possible to excise it, that operation should be done, as it undoubtedly offers the likeliest method of cure. After excision of the ulcer and ligature of the bleeding vessels the edges of the wound should be brought together by sutures, of which one or two layers may be employed. Should the excision involve the peritoneal coat, it would be desirable to apply Lembert's sutures, and if it be on the posterior wall the operation may present some, though not insuperable, difficulty. Should the ulcer be discovered in some region where excision is impracticable—for instance, near the cardiac end—the method adopted by Mikulicz in his first operation in 1887, of applying the cautery, may be employed. This seems to have answered well in several cases, and where death occurred afterwards it was not from a recurrence of the bleeding. In a case of this kind gastro-enterostomy is also advisable by way of setting the stomach at rest. If any superficial points of bleeding be discovered they may be caught up by forceps and ligatured, but this is more easily said than done, as the mucous membrane is very friable, and a ligature if drawn at all tightly tends to cut its way through; moreover, forceps easily tear the mucous membrane and may produce a larger bleeding area. The method of ligaturing *en masse* may be employed if the ulcer is small; it has proved serviceable in several cases, for instance in Case 5, which will be described presently, and it is easy of application when the ulcer can be reached. It has been tested by experiments on animals by Dr. Eisendrath, but it has been shown to endanger perforation if the serous coat be taken up, except when supported by external sutures. Ligature of the main arteries of the stomach was suggested theoretically by Savariaud when no bleeding ulcer could be discovered; it does not, however, commend itself as being safe or likely to be efficient.

Should the bleeding be from an ulcer at the pylorus the operation of pyloroplasty may be performed, the ulcer being excised and the edges of the gap left by the excised ulcer, as well as the edges of the incision being united so that the line of sutures shall be transverse to the axis of the pylorus. I would not, however, advise pyloroplasty when there is active ulceration of the pylorus unless the ulcer can be completely excised, for in three cases of this kind I have had subsequent disappointments owing to contraction in healing. In one case the patient made a good recovery from the operation but subsequently suffered from stenosis, for which a further operation had to be done. In a second case recovery took place and the patient regained his

[1] Philadelphia Medical Journal, June 8th, 1900.

lost weight, but subsequently a tumour of the pylorus developed which was thought to be cancer and for which I had to perform pylorectomy, and in the third case perforation subsequently occurred. I think, therefore, that in cases of ulcer of the pylorus where a clean excision of the ulcer cannot be done it would be better to perform gastro-enterostomy or pylorectomy, whichever at the time may appear to be easier. Wherever the pylorus is adherent, as in my experience it is in so many cases of ulcer, I should certainly prefer gastro-enterostomy; but if the pylorus be extensively ulcerated and free from adhesions pylorectomy can be almost as quickly performed as gastro-enterostomy, seeing that the pylorus is already in the hand. Although the operative treatment of parenchymatous or capillary hæmorrhage by any surgical method would seem to be of doubtful value—for according to a report by Petersen from Czerny's clinic of three cases operated upon for severe parenchymatous hæmorrhage from vicarious menstruation operation entirely failed to relieve, and in two other cases of post-operative parenchymatous hæmorrhage by Reichard the patients both died—yet if such cases, owing to persistence, seem to call for operation, then gastro-enterostomy, by securing complete physiological rest, would seem to offer the best chance of success.

In performing gastro-enterostomy my recent experience has led me to prefer the posterior operation which I have modified by using my decalcified bone bobbin as a hollow splint over which to apply the double continuous suture, uniting the mucous and serous margins of the openings between the viscera, thus securing an immediately patent channel between the stomach and jejunum and a temporary protection to the line of union. I may say that my last 20 gastro-enterostomies by this plan have all recovered without regurgitant vomiting or other untoward symptoms, thus affording a great contrast to what has occurred in the anterior operation, both in my own and in the hands of other surgeons.

The conclusions I would urge concerning the treatment of gastric ulcer are the following:—1. All cases of acute uncomplicated gastric ulcer should be submitted to thorough medical treatment in the shape of long-continued rest and attention to diet, the patients not being allowed to get up or to resume solid food until at least a fortnight after all disappearance of pain. 2. Where the ulceration persists and proves intractable to medical treatment, or where relapses occur, gastro-enterostomy should be performed so as to secure physiological rest and relieve the hyper-acidity of the gastric juice nearly always found in such cases. 3. Perforation demands immediate surgical treatment. 4. The complications of disabling adhesions around the stomach and pylorus, pyloric contraction, and hour-glass contraction due to chronic ulcers leading to pain, dilatation, loss of flesh, and general impairment of health, now often treated as chronic indigestion, should be treated surgically. 5. In recurring, or so-called chronic hæmatemesis from gastric ulcer, surgical treatment is decidedly called for. 6. In acute hæmatemesis, further accuracy in diagnosis as to the size of the bleeding vessels is urgently needed; and the cöperation of the physician and surgeon is advisable in all cases of hæmatemesis, so that if relief be not obtained by medical and general treatment surgical means may be adopted if the bleeding is believed to occur from a large vessel; but seeing that capillary hæmorrhage is capable of relief by medical means alone, medical should always precede surgical treatment.

The following are brief descriptions of all the cases of hæmatemesis on which I have operated.

CASE 1. *Chronic hæmatemesis; ulcer of the pylorus; pylorectomy.*—In 1891 I was asked by a medical friend to see a man, aged 54 years, who for six months had suffered from pain coming on an hour after food, and more recently from vomiting of blood of coffee-ground character in considerable quantities, so that he was not only reduced in flesh and strength but had been rendered profoundly anæmic by the loss of blood. A tumour of the pylorus could be easily felt and the stomach was markedly dilated. As he was rapidly losing ground I operated and found the pylorus thickened and nodular with adhesions to the liver and omentum. After separating the adhesions the pylorus was excised and the open end of the duodenum was fixed to the opening in the stomach, the rest of the stomach aperture being closed by a double layer of sutures. The tumour proved to be inflammatory around an open ulcer which had been the source of the hæmorrhage. The bleeding was not repeated and the patient rapidly gained flesh and returned home within the month.

CASE 2. *Hæmatemesis following on a stab wound of the abdomen; abdominal section.*—On JAN. 27th, 1897, a young mechanic, aged 20 years, was admitted to the Leeds General Infirmary under my care with free vomiting of bright blood following on a stab wound of the abdomen, the wound having been inflicted by a long five triangular file that had caught in the lathe at which the youth had been turning. On admission he was pale and collapsed, with a pulse of 190, and as there were signs of free fluid in the peritoneal cavity, it was thought that the stomach had been perforated and that the bleeding was from a ruptured gastric artery. On opening the abdomen a large quantity of blood and clot was found free in the abdominal cavity and in the kidney pouches and pelvis, but on examining carefully the stomach no perforation could be found. After some searching the superior mesenteric vein was found bleeding freely, the file having bruised and pushed aside the stomach, pierced the great omentum, and then wounded the vein. The abdomen was washed out with hot water after the vein had been ligatured, and this also arrested the gastrorrhagia, as the patient made a good recovery and had no further hæmatemesis. The shock was relieved by infusion of three pints of normal saline solution into the median basilic vein and by injection of liquor strychniæ. The bleeding was evidently from bruising, and possibly laceration, of the mucous coat of the stomach and not from a large vessel, as it was arrested by the hot lavage.

CASE 3. *Acute hæmatemesis from ulcer of the duodenum eroding the gastro-duodenal artery; anterior gastro-enterostomy with Murphy's button.*—I was asked by my colleague, Dr. T. Churton, to see a man, aged 36 years, who after a year's history of ulcer of the stomach with great loss of flesh and strength was suddenly seized with profuse hæmatemesis, which was followed in 24 hours by a second seizure, when I saw him. He was then extremely weak and very thin and anæmic and looked as if he must die if further hæmorrhage occurred. His pulse at the time of operation was 150. The history clearly pointed to the pylorus as being the seat of bleeding, but the patient was too ill to bear pylorectomy and an anterior gastro-enterostomy was performed by means of a Murphy button, the whole operation only occupying 15 minutes. He bore the shock well and for five days made good progress, but on the sixth day he was suddenly seized with severe abdominal pain, and from that time he lost strength; vomiting set in on the eighth day and he died on the tenth. No further bleeding occurred and at the necropsy a duodenal ulcer opening into the gastro-duodenal artery was found. The cause of death was peritonitis, the result of the leakage when the button began to separate. So far as the hæmorrhage was concerned the gastro-enterostomy had been completely successful, and the vessel, though perforated at one side, was occupied by a firm clot.

CASE 4.—A man, aged 44 years, was sent to me by Dr. P. Macgregor of Huddersfield, on Jan. 2nd, 1900, with the history that he had had pain after food together with other symptoms of gastric ulcer for four years, though his first attack of vomiting blood occurred in May of the previous year. The bleeding was rather profuse, but under medical treatment and rest he recovered and was able to resume his occupation. A week before he was sent to me there had been a recurrence of the hæmorrhage which was repeated three days later. On his arrival at the surgical home he was in a state of collapse with a barely perceptible pulse. There was well-marked dilatation of the stomach with tenderness over the pylorus. The history of the pain occurring one and a half hours after food, together with the site of the tenderness and the presence of a large amount of blood in the motions, left no doubt but that the ulcer was at or near the pylorus. As the bleeding had recurred twice in the week and was probably persisting and passing into the bowel, operation was decided on. This was done on the 4th. As the patient was in such a feeble condition every precaution was taken to guard against shock, and it was decided only to perform gastro-enterostomy as it was quite clear that he could not stand any prolonged search for the bleeding point. A posterior gastro-enterostomy was therefore done, a decalcified bone bobbin being used to make the anastomosis. His temperature and pulse were never above normal and he made an uninterrupted recovery. He was fed by nutrient enemata for the first few days, only taking sips of water by the mouth, but at the end of that time he was allowed to

take milk and soda water, and then gradually to have stronger food. He was up at the end of the third week and returned home within the month. A year later he was in perfect health and had had no recurrence of his stomach symptoms or any further bleeding.

CASE 5.—On July 6th, 1900, I was asked by Dr. G. P. Humphery of Armley to see a female patient, aged 33 years, who had been seized with violent hæmatemesis a week previously, the attack having recurred four days later and again on the day when I saw her. The patient had been anæmic before operation and had had some slight indigestion, but otherwise she did not consider herself ill, and she had been married only three months. On my arrival I found her quite blanched and with a very rapid, feeble pulse, but as the bleeding had resisted ordinary remedies and as she would clearly die if unrelieved, though it seemed a rather desperate procedure, we decided to give her the chance of relief by operation. She was removed by ambulance to a surgical home, and as during the journey the bleeding began again I operated without delay. A pint of saline fluid containing one ounce of brandy was given into the rectum and 10 minims of liquor strychniæ were administered just before the operation, the patient being completely enveloped in cotton-wool. On opening the abdomen there were no indications on the surface of the stomach as to the situation of the bleeding ulcer. I therefore made an incision in the axis of the stomach which enabled me to explore the interior. I counted no less than seven bleeding points. As two of them were bleeding freely I took them up by artery forceps and ligatured the mucous membrane *en masse;* the other points stopped on exposure to air. I then rapidly closed the wound in the stomach and performed posterior gastro-enterostomy, using one of my bone bobbins as a splint over which to make the anastomosis. We had a little anxiety on account of shock for the first 24 hours, but by administering saline fluid by the bowel and injecting it freely into the subcutaneous tissue, together with the administration of several injections of liquor strychniæ, the difficulties were tided over and the patient's further progress towards recovery was uninterrupted. She was able to take solid food in the second week, and when she left at the end of the month she could eat any ordinary food without discomfort. Six months later she had no recurrence of symptoms and was well in every respect.

Five is not a large number of cases to report, but the treatment of hæmatemesis by operation is a comparatively new operation, and only few cases have been reported. Had it not been for the accident of leakage when a Murphy button was beginning to separate there would have been no casualty in the list, and that is an accident which is avoidable by employing sutures around a decalcified bone bobbin, as is now my regular custom. Undoubtedly without operation all the patients would have died. The cases present individual points of interest. In Case 1 a pylorectomy was performed as the pylorus was the site of a tumour that might have been malignant, though could it have been asserted that the enlargement was simply thickening around an ulcer gastro-enterostomy would have answered equally well, as it did in Case 3 and Case 4 by securing physiological rest and freedom from the irritation due to hyper-acidity of the gastric juice which is usually present in ulcer of the stomach. In Case 2 hot lavage acted in the same way as it does when given by high injections into the bowel, only in this case it was necessary to open the abdomen to search for and to ligature the large vessel bleeding into the peritoneum. Case 5 illustrated the feasibility of exploring the stomach even in a patient brought very low by excessive loss of blood, and although the ligature of the chief bleeding points was effected it was deemed advisable to secure rest to the stomach by performing a posterior gastro-enterostomy, especially as it could be done without materially prolonging the operation.

It only remains for me to thank you for giving me such a patient hearing and to hope that the discussion which is to follow may prove of interest to the society and to the profession at large.

NEWPORT WORKMEN'S INFIRMARY FUND.—At a meeting of the committee of the Newport (Mon.) Workmen's Infirmary Fund held on Jan. 29th it was reported that £1317 had been received during 1900 £1000 were transferred to the infirmary, leaving a balance of £266 in hand after sundry payments.

The Baillie Lectures

ON

CONSIDERATIONS TOUCHING THE PATHOLOGY AND RELATIONS OF DIABETES.

Delivered at St. George's Hospital on Dec. 5th and 12th, 1900,

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LECTURE II.[1]

Delivered on Dec. 12th, 1900.

GLYCOGENESIS.

GENTLEMEN,—Some of the mystery which surrounds diabetes will be dissipated when we have come to a common consent about the bearing of the liver upon sugar. When Bernard made his famous research more than 50 years ago a sudden light was thrown upon glycosuria which led to the expectation that all would be soon made clear. But this hope has not been justified. We seem to be within sight of a great discovery without knowing exactly where to seize it. The spirits of the wise sit in the clouds and mock us. The time will come when all the disjointed fragments of the puzzle will be fitted together and those who look back upon the accomplishment may say, How easy, how obvious, and how strangely missed!

The liver is the great, though not the only, seat of the making of glycogen. As to the making of sugar there is more to be said. The liver receives by the portal vein what the veins take up from the alimentary canal, passes it through its own capillary system, with results which are still *sub judice*, and discharges the whole by the hepatic vein through the pulmonary into the general circulation. Certain parts of the food, notably the carbohydrates, are arrested in the liver and converted into glycogen or animal starch. This was discovered by Bernard and is admitted by all. The next step is upon debateable ground. Bernard supposed that the glycogen was converted in the liver into sugar and discharged as such into the blood. Thus the liver, according to Bernard, makes sugar out of glycogen and feeds the blood with it. This view is diametrically opposed by Pavy who considers that the liver, in making glycogen out of the carbohydrates, keeps sugar out of the blood. In Bernard's view the liver is a sugar-making organ, in Pavy's a sugar-arresting organ. Both these physiologists agree in looking upon diabetes as the result of too much sugar being put into the blood; they differ in the respect that according to Bernard too much is put in, according to Pavy too little is kept out. In Dr. Pavy's own words the sugar in diabetes is allowed to pass through which ought to have been arrested and assimilated. I will not presume to decide between these conflicting opinions. Both must be treated with respect. Bernard was the greatest physiological genius of the nineteenth century. Pavy has spent a long life of unremitting labour in a field of inquiry wherein he can scarcely be supposed to have toiled in vain. For the present we must halt between the two opinions, but it cannot be for long.

That the blood in diabetes contains too much sugar is undisputed. Theoretically this may be either because too much gets in or because too little is taken out. In both the views which have as yet been stated too much gets in, but it behoves us to glance at the other possibility. If any sugar reaches the blood in health, which Pavy contends is not the case, it is used up, since none, or practically none, escapes with the urine. Supposing it to reach the blood, to what use is it put? Bernard first thought that it was burnt in the lungs, afterwards that it was consumed in the systemic capillaries—in other words, by the tissues. It is clear that if any sugar enters the blood in health it is disposed of in

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[1] Lecture I. was published in THE LANCET of Feb. 2nd, 1901, p. 299.

the body, since none leaves it excepting under disease. It has been supposed by some that the accumulation of diabetes is due to insufficient removal rather than superabundant introduction. In this view the tissues fail to take up their due of sugar, which accordingly remains in the blood. This failure, however, supposing it to occur, must be quite inadequate to account for the enormous amount of sugar which the blood, in cases of severe diabetes, pours into the urine. This may come to over two pounds a day, a quantity which cannot be explained otherwise than by over-production of the article. It is impossible to suppose that the normal appetite of the tissues for sugar, if such there be, could account for so large a consumption of this aliment. We must conclude that diabetes depends on too much sugar being put into the blood rather than on too little being taken out, and the question narrows itself as to whence this is derived. I have already referred to Bernard's view that under diabetes too much sugar, or sugar instead of glycogen, is made in the liver. I must dwell for a moment on Pavy's contention that instead of too much being made too little is kept back. Pavy[1] holds that the carbohydrates of the food are, in health, prevented from reaching the general circulation by three modes of arrest: (1) conversion into fat before they reach the liver, mainly in the villi of the intestine; (2) conversion into proteid by means of superadded nitrogen; and (3) transformation into glycogen in the liver.

The failure of all or of any of these modes of turning the sugar into something else would, in this view, lead to its entrance into the general circulation and its discharge with the urine. In one view the liver has all to do with the diabetic process; in the other view something to do with it. Here I leave the question to the arbitration of the future with only this remark—whatever view physiologists may hereafter agree upon they will have to take into account the connexion of glycosuria with the nervous system as shown experimentally in animals, traumatically in man, and as the result of certain mental states and impressions. We know nothing of the action of the nervous system upon the villi or upon the building up of the carbohydrates into proteid, but we cannot doubt that the function of the liver is regulated by its nerves. All glands are under nervous control, and of two kinds—exciting and inhibitory. It is to be presumed that the sugar-puncture acts especially upon the liver, and that through its nerves, whether in the way of excitement or restraint. As a provisional theory, or hypothesis, which is probable though unproved, we may accept that which connects human diabetes, or at least the commonest form of it, with a morbid influence directed upon the liver from the brain.

It is probable that the glycosuric action in connexion with puncture is of the nature of irritation not of paralysis. For the sugar presents itself while the injury is recent and disappears when the immediate effect has subsided, before there has been time for any structural repair. What nerves are irritated is another question; there are nerves which promote glandular action and others which restrain it. Whether the irritation be of a kind to excite or inhibit may be regarded as uncertain. It is conceivable that the irritation may act by preventing the proper development of glycogen and allowing its elements to pass as sugar without that intermediary. On the other hand, it is possible that the morbid influence may cause the glycogen, after being properly formed, to run into sugar instead of being applied to other uses.

I have alluded to certain states of mind, or, in other words, of brain, as productive of diabetes. Grief, anxiety, and terror are noticeable in this relation. How these act we know not. If we require the satisfaction of a phrase we may say by means of cerebral irritation.

It is apparent, speaking superficially, without speculating on ultimate and hidden causes, that there is more than one kind of diabetes, or rather diabetes of more than one origin. Facts have come to light with regard to the pancreas which our present knowledge does not suffice to explain but which will have to be taken into account in any comprehensive view of diabetes. It has been shown that complete removal of the pancreas in the dog is followed by persistent and fatal glycosuria. If the removal be incomplete no such result follows nor does it follow if a piece of the organ be transplanted to another part of the body. The duct may be tied without any result in glycosuria which does not ensue so long as any portion of the pancreas is in vascular connexion with the system. It would seem that the pancreas, apart from its secretion, does something to the blood which in conditions of health restrains the formation of sugar. Many instances have been brought to light in which disease of the pancreas in the human subject has been attended with diabetes, fibroid and fatty degeneration, cancer, and calculi.

In diabetes there is much room for speculation, hypothesis, and error. Provisionally it may be suggested that the pancreatic origin of this disease is not necessarily inconsistent with its more frequent origin in the brain and the liver. It looks as if the carbohydrates were always tending to run into sugar and needed prevention at every stage. Hepatic glycogen passes rapidly into sugar as a post-mortem change. It is restrained from doing so above measure during life and health, presumably by an influence directed upon the liver by its nerves. Every dead man should be diabetic could he feast up to the moment of departure and secrete urine afterwards. There may be other stages at which the carbohydrates tend to slip into sugar if not prevented; one of these may be in the systemic blood, and the pancreas be the withholding agent. It may be that the saccharine conversion needs to be bridled in two places, the liver holding one rein, the pancreas the other. But I know the stigma which attaches to those who rush in where their betters fear to tread, and will quit the dark paths of physiology, which are not within my beat, for the familiar march of practical medicine where the concrete supersedes the abstract, where experience takes the place of experiment, and where science, often falsely so called, must ever submit to the correction of the wards and the dead-house.

The chief purpose of pathological research is to direct or withhold us in the treatment of disease. In this view the treatment of diabetes gains little from pathology. We must presume that the disorder depends on a lesion which is unknown in its fundamental part though converging evidence assigns it to the nervous system. We have reason to believe that the essential lesion is not to be cured though some of its effects can be obviated. We can treat the symptoms and results but not the disease. The most characteristic of these is glycosuria, and it may be added that it is the one most amenable to therapeutic measures. The discovery of Rollo, an army surgeon whose name suggests other adventures than with sugar and starch, is the basis of the scientific treatment of diabetes; not that this comprises the whole problem but only the first part of it. In early or slight cases the removal, even the partial removal, of sugar and starch from the diet may accomplish the removal of sugar from the urine; but in more advanced or severe conditions the glycosuria will persist notwithstanding that the food be deprived of these carbohydrates with the greatest attainable strictness. It seems that in mild or incipient cases the sugar which finds exit is only that which is introduced into the body as sugar or starch; in the more severe or advanced cases the sugar is formed at the expense of the nitrogenous constituents of the blood. The albumin is broken in two, one fragment being sugar, the other urea. Both make their way out by the kidneys. Thus the albumin, the chief nourisher in life's feast, becomes, so far as the disease seizes it, wholly excremental and feeds the urine instead of the body. "Hydrops ad matulam" is an old and not inappropriate name for the disease. The language sometimes

[1] Dr. Pavy has kindly enabled me to append in his own words an abstract of his views as contrasted with those of Bernard. "The position," writes Dr. Pavy, "may be thus expressed: Under Bernard's view the carbohydrate of the food reaches the general circulation as sugar and is conveyed to the tissues for oxidation. A portion in its transit through the liver is temporarily detained as glycogen to be reconverted into sugar and sent to the tissues as needed. I hold that there is not this transit of sugar through the circulation, from the food to the tissues, in a free form. The sugar in the blood, which is only small in amount compared with what was formerly supposed, I regard as a constitutional ingredient just as exists in all the tissues of the body and unconnected with the application of alimentary carbohydrate. It is not influenced in amount by the nature of the food; it does not perceptibly vary in amount in different parts of the general circulation; and it is present after prolonged fasting even after glycogen has disappeared completely from the liver and tissues. Looking at all the existing circumstances it is not conceivable that this sugar is being drawn upon for direct oxidation purposes, but that it rather serves as a pabulum in connexion with nutrition. The trace of sugar found in healthy urine harmonises with the condition of normal blood. I consider that the carbohydrate of food is disposed of—(1) by conversion into fat, (2) by synthesis into proteid, and (3) by transformation into glycogen, and is thus prevented from reaching the general circulation as sugar. When such is the case the urine remains uninfluenced, whilst if the carbohydrate should not be thus fully disposed of, that which escapes being disposed of will reach the general circulation as sugar and thence escape as waste material with the urine. For the urine to be kept free from sugar the sugar must be kept out of the blood."

employed would seem to convey that in mild cases the sugar is derived from the food, in severe cases from the tissues. It is obvious that in both cases the sugar in the urine is derived immediately from the blood, which is the only source of the renal secretion. In cases of the milder type the carbohydrates only are thus perverted; with the more severe cases the nitrogenous part of the blood is destroyed and excreted. The blood is mainly supplied by the food, probably only to a comparatively small extent by the disintegration of the tissues, and we must suppose that diabetic sugar is chiefly derived from the food, though it is not possible to deny that the waste of the living structures may contribute towards it. It is obvious that no restriction of diet can stop the excretion of sugar so far as this is derived from the albumin, but if only from the carbohydrates it may be put a stop to by their withdrawal. Whether the disease be slight or severe it equally concerns the carbohydrates, notably the sugar and starch; if severe it seizes the nitrogenous constituents of the blood plus the carbohydrates.

It has been supposed that certain toxic matters which are found in the urine in severe diabetes, such as acetone, diacetic acid, oxybutyric acid, and are in some sort a measure of its severity and peril, are derived not so much from the food as from the tissues of the body. At any rate they appear to be to a certain extent controlled by diet, though in severe cases the strictest exclusion of the carbohydrates though it may diminish will not exclude them. In such cases it is clear that these toxic products are derived, as in the sugar, from the disintegration of the nitrogenous products, whether of the food or the frame, probably chiefly of the food.

By diet we can always lessen the diabetic perversion even where we do not abolish it. Diet, putting aside exceptional circumstances, always does good, though not always all the good that is required. It is not necessary that I should inform this audience that the avoidance of sugar and starch is the guiding principle of diabetic diet, nor do I propose to weary you with a list, for such may be found in any text-book relating to the subject, of what the patient should eat, drink, and avoid. The sufferer from diabetes has a large liberty in the way of food. It is true that bread and water would not suit him, but so long as he keeps out of jail and avoids fasting, whether entailed by piety or poverty, he may do well. He may dine with a city company and so long as he does not take bread or potatoes feast like an alderman. The substitutes for ordinary bread present the chief difficulty. Gluten bread is theoretically correct, but some patients cannot get it down; they say it is like chewing india-rubber. But the gluten flour need not be made into bread, and it is often less objected to in other shapes which can be given to it in the domestic kitchen, cakes, buns, and puddings. Bran biscuits often do well and are useful, as they tend to obviate the constipation which is one of the troubles of the disease. Green vegetables—spinach, French beans, and the like—are fully recognised as fit for the diabetic; but I may mention some vegetable products which are not green and yet are of especial use in diabetes: I refer to vegetables containing much cellulose. It is true that cellulose is a carbohydrate, but it does not appear to be easily converted into sugar, and indeed it is doubtful whether in the human body it undergoes any such conversion. One of the troubles of diabetes is constipation; cellulose largely passes off in the fæces and tends to obviate this condition. The more bulky varieties of garden stuff, whether roots or fruits, may be made use of, such as cucumbers, vegetable marrows, tomatoes, and radishes. Apples, if not obviously sweet, may be permitted in small quantity. These articles of diet are not all absolutely free from sugar, but none contain much sugar, and certainly they are often useful, though perhaps not absolutely correct in theory. Anything is better than nothing, and if the diabetic cannot take what he should he had better take what he can.

It is of importance, even of vital importance, not to overdo the restrictions or to be too sudden in their introduction. In mild cases, where a minor degree of deprivation will suffice to remove the sugar from the urine, do not push it further. Milk, which as containing sugar of milk is theoretically inadmissible, is often normally assimilated when cane sugar is not. If milk is found not to increase the sugar in the urine it should be freely given. As to water, let the patient drink as much as his thirst demands. If there be any threatening of diabetic toxæmia, the more he drinks the better, to wash out the cause of offence. That the liberal introduction of water into the blood exerts a purifying action upon it and relieves it, if only for a time, of some of the toxic products of the disease, is evident from the marvellous though temporary emergence from diabetic coma which has been known to follow aqueous injections into the veins. Probably the water acts by increasing the excretions and assisting the exit of the diabetic poison.[3]

With diet as the fundamental part of the treatment of diabetes we may next come to the accessories. Of these opium and its constituents demand the first consideration. That opium, morphia, and codeia lessen the excretion of sugar is certain, a result which is consistent with the hypothetical origin of the disease in nervous irritation. The use of opium in diabetes was introduced, so far as I know, by Pelham Warren, physician to St. George's Hospital and to King George the Fourth. The paper may be found in the Medical Transactions of the College of Physicians for 1812. Dr. Pavy[4] refers to a Dr. McGregor as having placed on record in 1837 two cases of diabetes treated with opium as if the practice had been invented by him or were then a novelty, but I do not observe that Dr. McGregor makes any such claim himself though he does not mention Pelham Warren by whom he was anticipated in this use of opium by exactly a quarter of a century. Not that opium had never before been given in diabetes, though I suppose never before Warren's time was it credited with any special action in this disorder. Aretæus recommends the Theriaca of Mithridates,[5] of which one of the ingredients was opium, as of use in diabetes; but as this celebrated medicine contained 72 drugs it is difficult to know to which to attribute any good which it did, if, indeed it did any. As a modern and working practice I presume that the use of opium in diabetes belongs to Pelham Warren, though whether he has done more good or harm in this respect is an open question. That opium controls glycosuria is certain; that in severe diabetes a remarkable tolerance of opium is often manifest is apparent; but that opium cures diabetes or can be in general beneficially used in its treatment is a question. Opium disturbs the normal functions and often upsets the general health. Diabetes is attended with constipation which opium makes worse; one of the chief dangers of the disease is the special and fatal form of coma which the careless use of opium appears to invite. Of late years I have practically given up opium and codeia in the treatment of diabetes, and my impression is that my patients have lived longer without them than they would have done with them. If it be determined to make trial of one of these drugs I would, at any rate, urge its association with something that will antagonise its constipating effect: a few grains of compound rhubarb pill or a minute quantity of extract of colocynth or of podophyllin with each dose of the opiate and an occasional clearance with a mercurial.

Are we to do nothing, then, for diabetes save in the way of diet? Not quite this, though diet is of all things the most important and neglect is better than over-medication. I have no doubt that good is often done by the nerve tonics, especially strychnia, in favour of which I have nearly abandoned all other remedies of this class. Liquor strychniæ can be associated with tartrate of potash without fear of precipitation, though not with the alkaline carbonates. I have been in the habit, perhaps on insufficient reason, but with some aim at the nervous system and as I have thought with good result, of adding a few grains of phosphate of potash which, though it may serve no other purpose is a laxative. Diabetes is sometimes associated with gout and with excess of uric acid. Alkalies are of use in such cases. I must revert for a moment to another remedy which is called for both in gout and in diabetes, and that is water, soft water for choice—the universal solvent and eliminant, an eliminant that may postpone the coma which it cannot cure. The benefits of water-drinking and of alkaline or saline medication are combined in some of the baths to which diabetics resort, notably Carlsbad, the water of which contains chiefly sulphate of soda. No doubt Carlsbad water sometimes does good, and the air, the exercise, and the diversion may do good too. But before we send people to a foreign country let us make sure that they cannot get what they want at home. Travel and change are often in themselves remedial; but travel, if sometimes a

[3] See Cases of Diabetic Coma treated by the Intravenous Injection of Saline Liquid. W. H. Dickinson: Transactions of the Clinical Society, vol. xxiii.

[4] Pavy on Diabetes, second edition, p. 273.

[5] Paris's Pharmacologia, ninth edition, p. 78.

remedy, is sometimes an aggravation, and change is good when not for the worse; but the ills we know not of may be unwisely preferred to those we have.

Mineral waters contain many ingredients, some possibly good for the disease it is desired to benefit, some, perhaps, the reverse; let us find out what is required and give it without admixture or contamination. The chief remedy conveyed by every spring is the *water*, using the term in its chemical sense; we have plenty of water at home and that of the best. With regard to mineral springs, these are mere geological accidents; there was no thought of us, of the action of our livers or of the state of our urine, when the cracks in the earth's crust began to discharge their rinsings. Here is a spring, let us say, which tastes of brimstone and comes up hot, suggesting a greater proximity to the infernal regions than would generally be thought a recommendation. No beast will touch it. Man is more adventurous or more confiding. No sooner does he become aware that a certain spring yields water of exceptional impurity than the happy thought occurs to him, "Let us drink some." A course of mineral water is spoken of as a "cure," though possibly the patient may find his disease made worse thereby. Many a calculus, instead of being dissolved or expelled as the credulous proprietor was led to expect, has become the seat of fresh deposit and diversified stratification. A person with an incurable malady will go about from one "cure" to another enjoying, if nothing else, the pleasures of hope. Among the constituents of Carlsbad water are, according to Pereira, soda, lime, magnesia, alumina, manganese, iron, and silica in combination with sulphuric, hydrochloric, phosphoric, and fluoric acids. The time will come when we shall know which of these does good in diabetes and give it, or them, in a pure solution instead of the chance medley of a mineral spring. All we should ask of our location would be pure water in which to dissolve the essential salts. We should not be tied to a gushing fissure but might seat ourselves wherever air, scenery, and season indicated. And those who preferred to stay at home would find at home the salutary drink though not the salutary surroundings. But this is looking too far ahead; perhaps by the millennium we may have developed some such system of pure science and become able to deal with abstract properties, but at present we have to take things mixed and to do our best with barbaric methods. In Utopia, where the air and the water are the purest known, are places of easy resort where cunning chemists prepare the exact solutions suited to every ailment which is to be benefited by water. A series of taps dispense to every ailment its appropriate remedy. The gouty, the rheumatic, the rheumatoid, and the diabetic are each supplied with the precise drink which will do for him all that a drink can do. The glutton and the sot drink out of neighbouring channels and both are made ready for fresh excesses; while he who has taken too much out of himself finds his balance duly adjusted as well as he who has put too much in. Inspiriting adjuncts are provided, not omitting the "fiddlers three."

I have taken a retrospective view of our knowledge concerning a very common and very obscure disease, having regard to what we think we know and humbly confessing that what we do not know is assuredly the more important part. If such a sketch as I have attempted comes to the notice of the Baillie Lecturer of 1900 years hence it may appear to him to be inadequate and erroneous, perhaps even to a ludicrous extent. It is probable that minute morbid anatomy will by that time have been carried far beyond anything within the reach of our rude methods and our imperfect instruments and that modes of action within the body which now admit of doubt and dispute may then be so clear as to afford no scope for either. The wise man of the future whose topic is diabetes will know what importance to attach to such evidences of disturbed circulation as have been found in the nervous centres and may possibly be aware of other changes in them as yet unknown. He will know something of the way in which mental impressions fill the blood and the urine with sugar and why a lesser degree of the same contamination is a concomitant, though an infrequent one, of lunacy. The extravagant excretion of phosphate of lime in diabetes will be fully understood and the loss of the patella reflex will present no doubts as to the nature and the cause of the nervous lesion which it indicates. As to the treatment in the future it is unsafe to speculate, but we may with some confidence predict that it is more likely to rest upon improved physiology than upon the empirical use of drugs. As to mineral waters, I suspect that they will be resorted to in the future as in the past and that the chance mixture which nature provides will long be preferred to anything which the most accomplished physician, aided by the most accurate chemist, can design.

Three Lectures

ON

THE SURGERY OF PREGNANCY AND LABOUR COMPLICATED WITH TUMOURS.

Delivered at the Medical Graduates' College and Polyclinic on Jan. 11th, 18th, and 25th, 1901,

BY J. BLAND-SUTTON, F.R.C.S. ENG.,

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LECTURE I.

Delivered on Jan. 11th.

PREGNANCY AND LABOUR COMPLICATED WITH OVARIAN TUMOURS.

GENTLEMEN,—Anything which jeopardises the life of a woman when she is advanced in pregnancy, but more especially when she is enduring the "pain of childbirth," always excites our deepest interest and sympathy quite apart from the fact that two lives are involved. This being so I shall begin this lecture by briefly stating the details of two cases which will well illustrate the grave dangers which beset the life of a mother and of the child when, after being some hours in unavailing travail, it is discovered that her pelvis is occupied by a tumour.

CASE 1.—On Oct. 3rd, 1900, a woman, aged 28 years, had been in labour with her first child for about 20 hours. She was then seen by Dr. A. B. Calder who found delivery obstructed by a large, tense, semi-fluid mass occupying the outlet of the pelvis. He at once recognised the gravity of the case and had the patient conveyed to the Chelsea Hospital for Women in a cab. I happened to be at the hospital when she arrived and quickly satisfied myself that the hollow of the sacrum was filled with a large, tense, cystic mass which completely occupied the true pelvis. We at once arranged for speedy relief. The abdomen was carefully washed and made as antiseptic as possible in the circumstances and the patient was etherised; the uterus was exposed by a free incision in the linea alba and an attempt was made to extract the tumour. The head of the fœtus was so thoroughly impacted in the pelvis that I could not even insinuate a finger between the uterus and the pelvic brim; under these conditions I incised the uterus and extracted the fœtus with its placenta and membranes; this enabled me to reach the cyst and to withdraw it from the pelvis. As is always the case in such circumstances, it had a long and slender pedicle which I ligatured with thin silk in the usual manner. The incision in the uterus was closed with two layers of silk sutures, one set including the mucous and part of the muscular wall, the second including the serous layer and subjacent portion of the muscular wall of the uterus. The incision in the linea alba I closed in three layers. The vagina was thoroughly irrigated and the patient, who had lost very little blood, returned to bed in excellent condition. The infant, a vigorous boy, "wauled and cried" as usual on his advent into the atmosphere, and on the second day he took the breast in the ordinary way and throve as usual. The mother convalesced with as little difficulty as after normal labour. I considered it desirable to keep her resting in bed for three weeks to allow the uterine, as well as the abdominal, incision to heal soundly. The tumour was a dermoid with a single cavity filled with the usual pultaceous matter mixed with shed hair and containing one piece of bone. It was somewhat ovoid in shape, its axes measuring ten centimetres by eight centimetres. The consistence of the contents of the dermoid was about

equal to that of soft soap, so that under the pressure of the strong uterine contractions it had become very accurately moulded to the cavity of the true pelvis.

CASE 2.—On July 29th, 1896, a friend of mine, a practitioner with extensive experience in midwifery, asked my advice in regard to a woman, aged 33 years, the mother of two children, in travail with her third child, but delivery was obstructed by a pelvic tumour. I advised him to send the patient into the hospital without delay so that ovariotomy could be carried out. Instead of this he obtained the assistance of another practitioner and they succeeded in pushing up the tumour and extracting the child with forceps. On August 2nd—that is, the third morning after delivery—the patient had severe pain in the abdomen, accompanied by vomiting, an accelerated pulse, and high temperature. This naturally caused alarm; my friend came to me and described the treatment that had been adopted and which I have just described. The patient was admitted into the hospital in an extremely critical condition; the abdomen was greatly distended and tender, the pulse rate was 150 to the minute, the temperature was 100° F., and the patient looked extremely ill and vomited frequently. I gently examined the abdomen but could not distinguish a tumour and I came to the conclusion that it had in all probability been burst when it was pushed out of the pelvis. This conjecture, however, proved to the erroneous. The patient's condition, though clearly desperate, was not entirely hopeless, and it seemed cowardly to abandon the poor woman to her fate, so I performed cœliotomy. On incising the abdominal wall a large quantity of muco-purulent fluid escaped and the intestines were villous with patches of inflammatory lymph. An ovarian tumour of the dimensions of a fœtal head was detected and removed; its pedicle was twisted through one complete revolution. No signs of injury were observable on the uterus or in the pelvis. The exudation was carefully removed and the wound was secured in the usual way. The operation failed to improve matters and the patient died 18 hours later. A very thorough post-mortem examination failed to throw any light on the cause of the peritonitis. The tumour was a semi-solid ovarian adenoma.[1]

These two cases deserve careful consideration, for whilst the issue in each instance is in striking contrast the method which I adopted in the successful case is by many regarded as distinctly unorthodox, inasmuch as it is contrary to authority and tradition, whilst the ancient method adopted in Case 2. which resulted in the death of the child and subsequently involved the life of the mother, has the sanction of some practitioners who make midwifery the principal work of their lives.

The subject is specially interesting to me because when preparing the second edition of my book on "Surgical Diseases of the Ovaries and Fallopian Tubes" I accumulated a quantity of records from a variety of sources and analysed them in regard to this particular point, and although I was able to work out certain principles for my own guidance it is quite clear from a study of some of the "remarks" made on the subject that the Fellows of the Obstetrical Society of London are very uncertain which is the best way of dealing with this serious difficulty.

Let me first show you how uncontrolled nature acts in such an emergency as is set forth in these two cases—that is, when an ovarian tumour occupies the pelvis and offers mechanical impediment to delivery. In such circumstances the fœtus almost invariably dies and the following accidents may happen: (1) rupture of the cyst; (2) rupture of the uterus; (3) rupture of the vagina; and (4) extrusion of the tumour into the rectum. This is a formidable list of dangers and, extraordinary to relate, with the exception of rupture of the uterus women have recovered even under such awful conditions. It will serve my purpose very well briefly to refer to some of the more important of them, as it will enable me to indicate in precise terms the disadvantages of some of the methods of treatment which are still advocated.

Rupture of the uterus.—This, I believe, is a somewhat exceptional accident under these conditions, but the best known case was recorded by Ogier Ward[2] in which a cyst of the right ovary as large as a cocoanut prevented the head of the fœtus from entering the true pelvis. The uterus ruptured and the woman died.

Rupture of the vagina.—This is an unusual accident when it occurs as a result of the efforts of the uterus alone. One of the best-known examples is that recorded by Kerswill. A woman in labour was found to have an obstruction in the pelvis. In the course of the delivery an ovarian cyst of the size of a cocoanut was detached and forced through a rent in the vagina. Five centimetres of the pedicle remained on the tumour. The patient recovered.[3]

Extrusion of the tumour into the rectum.—One case has been observed and recorded in which an ovarian dermoid obstructing labour has been pressed into the rectum and the wall of the bowel has become invaginated and the tumour, invested by the bowel, has been extruded through the anus. In these circumstances the practitioner has incised the mucous membrane and seized the tumour and detached it after ligaturing the pedicle. The patient recovered.[4]

Rupture of the cyst.—This is, I believe, the common way in which nature overcomes the difficulty, and if the cyst be thin-walled and the fluid sterile so far as micro-organisms are concerned the results are not necessarily harmful, but when the tumour has thick walls and contains dermoid material the effects are often very grave.

Brewer recorded a case in which an ovarian cyst obstructed delivery. The cyst burst and its contents escaped through a rent in the vagina; the woman recovered.[5] This observation is of some interest because some accoucheurs recommend in cases where a cyst obstructs the transit of the child that it should be emptied through a vaginal puncture (Herman). It is certain that some patients have survived this unsurgical procedure and that some have died after it. On one occasion a practitioner not only punctured the cyst but stitched the edges of the puncture to the vaginal wall.[6] Attempts to clear an obstruction of this kind by the vaginal route could easily be pushed a step further if the practitioner had a little operative experience and the whole cyst could be removed through an incision in the vagina, a procedure recommended by Dakin.

As delivery by nature's own efforts when a firm ovarian cyst or solid tumour blocks the pelvic outlet can scarcely be described as successful it will be useful to consider the various expedients adopted by accoucheurs to meet these difficulties and the results which have accrued therefrom.

A remarkable case is that reported by Berry. A woman taken in labour with her tenth child was found to have her pelvis obstructed by a tumour. The child was delivered by forceps. The same evening the patient felt something escape from the vagina during a fit of coughing. This Dr. Berry recognised as an ovarian cyst extruded through a rent in the vagina. He ligatured the pedicle and removed the tumour. The woman recovered. This cyst is preserved in the museum of St. Bartholomew's Hospital.[7]

In 1898 a ruptured ovarian dermoid was exhibited at the Obstetrical Society of London which had obstructed labour in a woman, 27 years of age, the mother of one child four years old. Attempts made to deliver with forceps failed; the dead child was then extracted by turning. Next day signs of peritonitis appeared and the patient died on the third day. At the post-mortem examination the burst dermoid was found.[8]

In a case full of interest recorded by Griffith delivery was obstructed by a large solid tumour of the ovary. He performed craniotomy, but then the fœtus could not come through; he then turned the child and even in this way its transit was difficult. The mother died.[9] This is a rare complication and it gave rise to an erroneous diagnosis. Griffith regarded the mass to be an extra-uterine fœtus. The pelvis, in section, is preserved in the museum of the Royal College of Surgeons of England and is represented in Fig. 1.

When a small dermoid obstructs delivery it may be possible to effect delivery by turning, but I think the subjoined case is not a recommendation for this manœuvre.

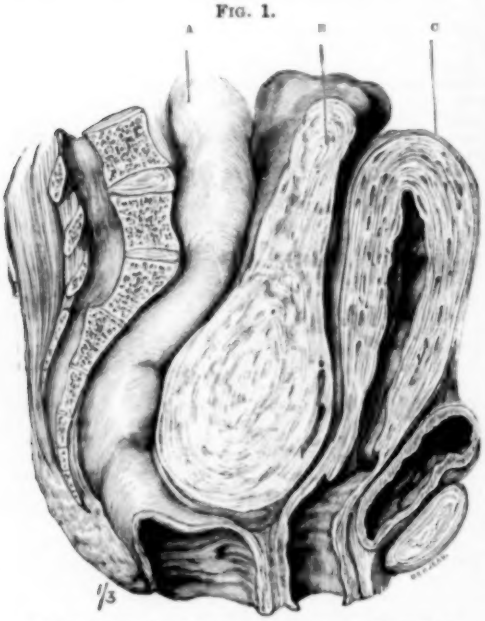
CASE 3.—A young married woman under my care in 1892 made the statement that she had been twice delivered of stillborn children after exceedingly difficult labours. The fœtuses in each case were extracted by turning and her life was despaired of after each confinement. On the second occasion the practitioner detected a tumour in the pelvis. I removed this in the Middlesex Hospital; it was an ovarian

[1] Middlesex Hospital Reports, 1896.
[2] Transactions of the Pathological Society of London, 1853, vol. v., p. 219.
[3] Brit. Med. Jour., 1880, vol. ii., p. 83.
[4] Alexsenko.
[5] Transactions of the Obstetrical Society of London, vol. xx., p. 184.
[6] Fritsch.
[7] Transactions of the Obstetrical Society of London, vol. vii., p. 263.
[8] Ibid., vol. xl., p. 331.
[9] Ibid., vol. xxxiii., p. 140.

dermoid with an average diameter of five centimetres firmly fixed to the pelvic floor by dense adhesions. The patient recovered and re-conceived and had a living child two years after the operation.[10]

The methods of dealing with labour when obstructed by a pelvic tumour which we have just considered may for

FIG. 1.



Saggital section of a pelvis in which delivery was obstructed by a solid tumour of the ovary. (Museum of the Royal College of Surgeons of England.) A, Rectum. B, Tumour of ovary. C, Uterus.

convenience of reference be described as craniotomy, forceps, and version, and they have only been mentioned and illustrated by typical cases in order that they may be thoroughly condemned.

To-day the choice of treatment really lies between two methods. 1. In the early stage to push the tumour out of the pelvis and allow labour to be completed and then at some convenient season to perform ovariotomy. This is often referred to as "reposition." 2. To perform ovariotomy at once and then to accelerate the labour by the use of forceps. If the tumour cannot be extracted then perform Cæsarean section. This method may be conveniently referred to as ovariotomy which may occasionally require Cæsarean section. The two cases which I detailed in opening this lecture illustrated very well some of the chief points of the two rival methods, but it is necessary to enter somewhat into detail concerning re-position because it is advocated by some obstetricians whose experience entitles their opinions to careful consideration. They advocate reposition whenever it is practicable on the ground that it allows labour to be completed, and although the necessity for ovariotomy is not avoided, nevertheless it does allow such an operation to be carried out in a more convenient manner and under conditions which not only safeguard it from sepsis but permit it to be performed by an individual skilled in this class of work.

To these views it may be urged that the surroundings of a woman in labour ought to be such that she runs no risk from sepsis. At the present time no surgeon would think of performing even a trivial operation without antiseptic precautions of some formula or other, and exactly the same precautions should be made for nature's interesting and important operation of childbirth. Further, in all large towns experienced operators are available and, in the case of the poor, well-equipped hospitals are always ready to receive urgent cases of this kind, as well as accidents, into the wards; and it is undeniable that an ovariotomy performed by an operator skilled in pelvic surgery is attended with far less risk to life and health than a normal labour in septic surroundings.

There are two very grave dangers which attend reposition—namely, rupture of the cyst and acute twisting of the pedicle; each of these are conditions which when they occur in non-pregnant women are held as justification for immediate ovariotomy. It is easy to collect half a score of cases in which reposition has been successful, but the unsuccessful cases are not recorded and thus we are deprived of any means of comparison. Be this as it may, I am quite certain from the remarks made at the Obstetrical Society of London in 1897, on the occasion when Dr. R. G. McKerron's painstaking paper on "The Obstruction of Labour by Ovarian Tumours in the Pelvis" was read, that the majority of practitioners will, when face to face with a difficulty of this character, make a determined effort to push the tumour out of the pelvis. This is, however, decidedly in opposition to all the canons of surgery, as I will now endeavour to show. It may perhaps be useful to indicate the position in a decided way and to state that *pregnancy exerts a baneful influence on ovarian tumours; and ovarian tumours are, as a rule, inimical to successful pregnancy.*

As a matter of fact tumours of the uterus as well as those arising in the ovaries are very liable to induce abortion and it is difficult to state which are the more pernicious in this respect, but I will take the opportunity of relating the details of a case which will well illustrate the malign influence of even a small ovarian tumour in pregnancy.

CASE 4.—A woman, 26 years of age, was placed under my care in the Middlesex Hospital in 1900 on account of a small ovarian tumour. The patient had been married 18 months, and in this short time had miscarried on three occasions and was pregnant for the fourth time. After the third abortion a small moveable tumour was detected at the back of the uterus, and when her medical attendant realised that she had again become gravid he urged her to submit to operation. I performed ovariotomy and removed the right ovary which was converted into a cyst as big as a fist, and the pregnancy, which had then advanced to the end of the second month, was not disturbed, and she is now daily expecting her travail.

In studying the literature of ovarian tumours complicating pregnancy, and especially tumours incarcerated by the gravid uterus, one of the most prominent facts is the frequency with which the tumours are dermoids; in many instances also the dermoids are bilateral, and this is a fact to bear in mind. For example, Berry Hart performed ovariotomy on a woman in the beginning of the fifth month of pregnancy and removed a dermoid of the left ovary "enlarged to about the size of a man's brain by recent hæmorrhage resulting from a twisted pedicle. The patient made good progress for a week, but on the ninth day died of cardiac failure." A frozen section was made of the pelvis, and on inspecting the cut surface the right ovary was seen to be incarcerated in the recess of the sacrum (Fig. 2). Bilateral ovarian dermoids co-existing with, or detected soon after, delivery have been observed and recorded by Knowsley Thornton, Bantock, F. Page, Cullingworth, and others, including myself, which have demonstrated that a woman may have one or both ovaries transformed into dermoids and yet they are capable of yielding fertilisable ova.

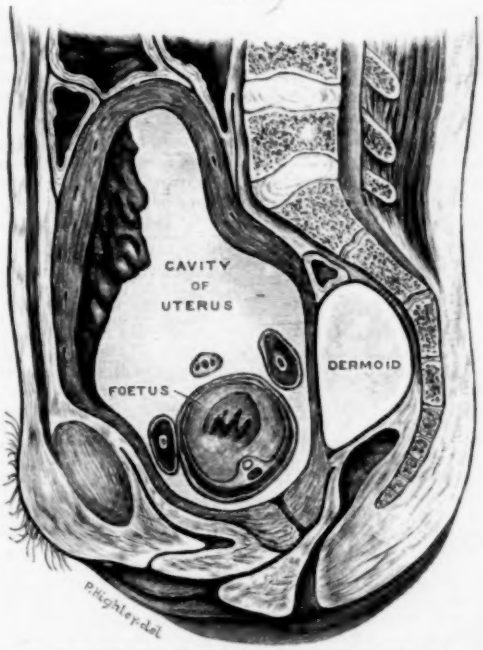
It may not be amiss if I briefly draw your attention to the steps by which the surgical treatment of ovarian tumours complicating pregnancy has been evolved. Although ovariotomy during pregnancy had been successfully performed in 1847 by Burd of Shrewsbury, by W. L. Atlee in 1850, and by Marion Sims, the procedure did not meet with favour until Spencer Wells forced it on the profession in 1877. This surgeon had pointed out its justifiability in 1870; but seven years later he strengthened his argument by reporting nine cases of ovariotomy during pregnancy with one death. The discussion which followed the reading of his paper at the Obstetrical Society of London is well worth perusal as indicating the opinions regarding this grave complication and its treatment held by the leading obstetricians of that period. A very large number of cases have since been recorded which show that it is now the recognised method of treatment in the early stages of pregnancy.

It would be suspected that the risks of ovariotomy during pregnancy would be those of an ordinary ovariotomy *plus*

[10] Medical Press and Circular, 1892, vol. ii., p. 94.

the chance of abortion with its ordinary dangers, but an analysis of a large number of cases demonstrates that when ovariotomy is performed before the fourth month of pregnancy the chances of abortion are very small, whereas the average mortality is less than in ovariotomy performed on non-gravid women. The risks of even double ovariotomy during pregnancy when the operation is undertaken before the fourth month are very small and the chances of disturbing the pregnancy are few. A critical study of a large number of records led me to formulate the results in this

FIG. 2.



Frozen sagittal section of a pelvis at the beginning of the fifth month of pregnancy. A dermoid of the right ovary is incarcerated in the hollow of the sacrum by the gravid uterus. (From Clarence Webster's Researches on the Anatomy of the Female Pelvis.)

way: Before the fourth month of pregnancy single and double ovariotomy is attended with an exceedingly low rate of mortality, and the risk of disturbing the pregnancy is small. The removal of a parovarian cyst during pregnancy is more liable to disturb the uterus than simple or double ovariotomy. After the fourth month the risk is that of an ordinary ovariotomy, but the chance of abortion increases with each month.

Now that we realise the importance of removing ovarian tumours whenever they are detected quite a large number of records have been published in which ovariotomy has been successfully performed in the later stages of pregnancy, and in three instances it has been carried out successfully at the end of the ninth month of pregnancy by Pippingsköld,[11] by myself,[12] and by Morse.[13] In Morse's, as in my patient, the tumour was a dermoid incarcerated in the pelvis by the pregnant uterus. In my case the tumour was detected during the birth of the patient's child, which was stillborn in consequence of the obstruction which it offered to delivery, and no active steps were taken to have the tumour removed until the woman was again well advanced in pregnancy (seven and a half months). This being the condition I thought it judicious to keep her under observation in the hospital until near term, so that in the event of the operation precipitating labour the child would be thoroughly viable. Five years after the operation the mother and child presented themselves in excellent health.

It has now been clearly demonstrated that ovariotomy has been performed with very marked success in each of the nine months of pregnancy and it has now in a fair number of instances been carried out whilst the patient was in labour. In this extreme condition the necessity for ovariotomy may be formulated thus: When an ovarian tumour is discovered during labour and it impedes delivery ovariotomy should be performed. If the tumour offer no obstacle to the passage of the fœtus it should not be interfered with until after the puerperium unless unfavourable symptoms arise.

It may be urged in reply to the above aphorism that it is not always easy to carry out the operation, and in the case with which this lecture opens it was impossible to extract the tumour from the pelvis until after the uterus had been emptied by Cæsarean section. This difficulty also occurred to Dr. Boxall; it is clearly one which will present itself from time to time. I have thought it desirable to add a list of recorded cases in which ovariotomy has been performed upon women actually in labour. The cases have been drawn from purely British sources. For this I hope not to be accused of what is sometimes facetiously called "insularity." I am convinced that the enormous population of this island should furnish material enough to settle the principles of treatment which should govern these terrible cases of obstructed labour.

Ovariotomy for Tumours obstructing Labour at Term.

Operator.	Nature of tumour.	Result.	Reference.
Williams (Sir John)...	Cyst.	Recovery.	Transactions of the Obstetrical Society of London, vol. xxvi., p. 203.
Spencer	Dermoid.	Recovery.	Ibid., vol. xl., p. 14.
Boxall*	Dermoid.	Recovery.	Ibid., vol. xl., p. 25.
Bland-Sutton*... ...	Dermoid.	Recovery.	This lecture, Case 1.

* In these cases Cæsarean section was necessary in order to extract the cyst from the pelvis.

It is not stating the case too positively to assert that "when an ovarian tumour complicates pregnancy the life of the woman is imperilled throughout the whole of the term; the peril increases with each succeeding month of gestation and culminates in a climax with labour (or abortion)." During delivery, however, mischief may be produced which is only appreciable during the puerperium.

Throughout this lecture we have almost exclusively considered those cases where an ovarian tumour is incarcerated in the pelvis and obstructs (as a rule completely) the transit of the child. We have now to deal with a much more insidious, and a far more fatal, complication—namely, where an ovarian tumour complicates labour and delivery is completed without in some cases its presence being even suspected. The two great dangers at this period are (1) rupture of the cyst and (2) axial rotation.

It is natural to infer that when an ovarian cyst with thin walls be subjected to pressure from a uterus during labour it would burst, and it by no means follows that the accident is necessarily lethal, for cases have been accurately observed in which the cyst has burst and the fluid absorbed by the peritoneum has been excreted by the kidneys. All operators of experience in abdominal surgery have found collapsed ovarian cysts in the abdomen and the intestines inundated with the viscid colloid stuff, and after removal of the tumour the patients have recovered. It is also true that even the distribution of the greasy material characteristic of dermoids among the pelvic viscera and adjacent sections of the intestine is not always attended with fatal consequences; an ovarian cyst may be ruptured during delivery and may cause such disturbance that the patient's life is jeopardised, or in many instances destroyed. In other cases the collapsed cyst may slowly refill and may require to be removed many months afterwards.

When pregnancy and labour are complicated with ovarian tumours the latter are very liable to undergo axial rotation and to twist their pedicles. It is quite true that almost every viscus in the abdomen is liable to axial rotation, yet all writers on the subject agree that this accident most commonly arises with ovarian tumours associated with a

[11] American Journal of Obstetrics, vol. xiii., p. 308.
[12] Brit. Med. Jour., 1895, vol. i., p. 461.
[13] Transactions of the Obstetrical Society of London, vol. xxxviii., p. 221.

pregnant uterus. I have studied the question very closely and carefully. The torsion may occur early in the pregnancy or it may be delayed till delivery. The occurrence of acute torsion at the time of delivery (or abortion) is due to the rapid diminution of the uterus and the movement which this organ as it sinks into the pelvis imparts to the tumour. A case of very great interest in relation to this question was reported by Dr. St. John Edwards in THE LANCET of 1861.[14] A woman, 24 years of age, had for at least two years previously an ovarian tumour on the right side which did not attract much attention until she became pregnant in 1860. In October of that year she was delivered of a child who only survived a few days. Immediately after the birth of the child the tumour shifted over to the middle of the abdomen. On August 5th, 1861, this woman was delivered of another child at the seventh month; the infant lived a few hours. After the child was born the tumour was found in the middle line of the abdomen. The patient died three days later. At the post-mortem examination the pedicle of the cyst was found twisted one and a half turns; it contained four litres of blood-stained fluid. The ovary was on the surface of the cyst, which was therefore parovarian in origin. I have often referred to this case, for it illustrates very well the fact that the majority of ovarian cysts, when they rotate axially, turn to the middle line and instead of occupying a lateral position lie in the hypogastrium. I have on nine occasions performed ovariotomy when the tumour has been noticed a few days after labour. The patients state that they notice that the abdomen does not return to its proper size and in some instances that it seems to enlarge again. This enlargement in some of the cases was due to bleeding into the cyst. A marked feature in all the cases, and one which led to some doubt in the diagnosis, was the way in which the tumour occupied the middle line of the abdomen and simulated an enlarged uterus and in all the cases axial rotation had occurred. In some of them the skin of the abdomen exhibited the peculiar yellow pigmentation so often associated with pregnancy, but which very rapidly disappeared after the removal of the tumour. The axial rotation of an ovarian cyst not only menaces the life of the patient immediately on its occurrence, but the longer it is allowed to persist it increases the difficulty, and therefore the risk, of ovariotomy by establishing extensive adhesions between the tumour and the adjacent viscera, especially the intestines.

Another danger which threatens a puerperal woman when she has an ovarian cyst is the liability of the cyst to suppurate. A critical study of a large collection of histories of patients who have had their "labour" complicated with ovarian cysts shows that in the majority of instances the cysts have twisted pedicles and that in a fair proportion of cases suppuration has occurred in the cyst. In many of the cases a ruptured cyst has been found.

It is now a well-attested fact that ovariotomy can be successfully performed even while labour is in progress—that the operation in no way interferes with the contraction of the uterus. Single and even double ovariotomy can be successfully performed in the puerperium without in any way interfering with either the involution of the uterus or lactation. Therefore, it cannot be too strongly urged that *when a puerperal woman known to possess an ovarian tumour exhibits unfavourable symptoms ovariotomy should be resorted to without delay.*

[14] THE LANCET, Oct. 5th, 1861, p. 336.

MORETONHAMPSTEAD HOSPITAL.—The hospital which the Hon. W. F. D. Smith, M.P., has endowed with £2000 and presented to Moretonhampstead, Devonshire, as a memorial to his late father, was opened on Jan. 26th. Owing to the death of the Queen the formal opening by Lady Esther Smith was abandoned.

NEWTON ABBOT BUILDING BY-LAWS.—At Newton Abbot (Devon), on Jan. 29th, a builder was charged with two breaches of the building by-laws of the Newton Abbot Rural Council—viz., that he varied the plans of cottages after they had been approved by the council and that he permitted the houses to be occupied without obtaining the usual "occupation certificate." The magistrates fined him £1 and costs in each case and also a penalty of 1s. a day until the by-laws are complied with.

A PLEA FOR THE MORE CAREFUL STUDY OF THE SYMPTOMS OF PERFORATION IN TYPHOID FEVER WITH A VIEW TO EARLY OPERATION.

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THIS plea is addressed to the resident physicians and the house physicians of the general fever hospitals, and to those practitioners who see a large number of cases of enteric fever. From 7 to 14 per cent. of typhoid fever patients die. During the first 10 years of my service at the Johns Hopkins Hospital there were 63 deaths among 829 patients—7·5 per cent., the minimum rate reached in general hospitals. Of the deaths in typhoid fever 50 per cent. are by asthenia—a result of the fever, or of the poison, or of both; 25 per cent. from perforation; from hæmorrhages and other accidents, 25 per cent. Modern methods—hydrotherapy and good nursing—have reduced the death-rate in the asthenic class. The perforation group, as shown by the statistics of the Brisbane General Hospital (Hare), of the Johns Hopkins Hospital, and of other institutions, remains much the same as given in the large statistics of Murchison and of Fitz. Whether with early removal of the patients to hospital there may be a still further reduction in the mortality of the asthenic or toxic group, we cannot say; but we can speak positively of a reduction in the death-rate in what has been the most hopeless of all the complications of the disease—perforation. I shall not take up space by any discussion of the conditions under which this accident occurs. I wish to call attention to the fact that *early diagnosis and early operation may save from 30 to 40 per cent. of the cases.* To Jan. 1st, 1900, there have been 11 cases operated on from my wards with five recoveries, 45·4 per cent. It is often a desperate remedy for a desperate condition. There are three groups of cases: first, those with so much infiltration and necrosis that the gut is not in a fit condition for operation, and the state of the patient may contra-indicate any attempt at resection. This was the condition in a recent case. In a second group the operation is successful, but the patient dies in the due course of the disease from the intensity of the fever or in a relapse. In a third group complete recovery takes place.[1] To incessant watchfulness on the part of my senior assistants and to their constant consultation with the surgical members of the staff I attribute the remarkable percentage of recoveries in our cases.

The classical picture of perforation in typhoid fever is in reality not of perforation but of the consecutive peritonitis, and the vital question is whether we cannot recognise the perforation and hand the patient over to the surgeon within 12 hours of the onset before the peritonitis has become widespread. Unfortunately the symptoms are often obscure, and I know of no more anxious and critical task than that which confronts us in some of these cases. What I am particularly anxious to urge is the careful study of the abdominal symptoms in every case of typhoid fever. Specific instructions should be given to the sister in charge of the ward to notify the house physician at once of any complaint of abdominal pain, of hiccough, of vomiting, of sudden rise in pulse or respiration, of unusual sweating, or of signs of collapse. The house physician should bear in mind that perforation is an accident liable to occur in the severe cases, in those with delirium, with diarrhœa, or with hæmorrhage, and in those with abdominal symptoms, so that he should be on the watch, and his daily notes should be made with a view of gauging the progress of the symptoms. The following schedule may help him in drawing up his clinical memoranda.

1. *The pain.*—(*a*) Its onset, whether simply an aggravation of the slight abdominal pain such as is common with constipation or with diarrhœa, or whether it is a sudden, intense pain, which causes the patient to call out, and which, though relieved by stupes and ordinary measures, recurs in paroxysms and grows worse. (*b*) Its locality, whether in

[1] It is interesting to note the increasing percentage of recoveries. In Dr. Finney's elaborate analysis of 112 cases in the literature the death-rate was only 21. (Johns Hopkins Hospital Reports, vol. viii.)

the hypogastric or in the right iliac regions, or in the region of the gall-bladder; whether it is diffuse or localised; whether it radiates towards the pubes or to the penis. It is to be borne in mind that abdominal pain of a severe character in typhoid fever may be associated with an acute pleurisy, with a distended bladder, with a packed rectum, or it may follow an enema, or it may occur with acute cholecystitis.

2. *The state of the abdomen.*—(*a*) Whether flat, scaphoid, or distended, and whether, if distended, it is uniform, or chiefly in the hypogastric region. (*b*) The respiratory movements, whether seen uniformly, and whether below and above the navel. It is to be borne in mind that perforation may be present with a flat or even with a scaphoid abdomen. (*c*) Palpation. Observe the degree of tension of the abdominal wall, the presence of pain on pressure, the locality of the pain, the extent, the degree of pressure necessary to elicit the pain, and whether it is a pain of increasing severity; the presence or absence of muscle rigidity or spasm, noting particularly its presence or absence in the hypogastric region and in the right iliac fossa. (*d*) Percussion. The character of the note in the front of the abdomen and in the flanks. Auscultatory percussion may be helpful when gas is free in the peritoneum. A flat note in the flanks may be present, due to exudate, within 20 hours of the occurrence of the perforation. (*e*) The liver flatness. Note specifically every third hour after the onset of the symptoms the extent in the middle, nipple, and mid-axillary lines. Remember that obliteration may occur in a flat as well as in a distended abdomen. Complete obliteration in the nipple line may be caused by excessive tympany, but rapid obliteration in a flat, or a not much distended, abdomen is a valuable sign. (*f*) Auscultation. Note the presence or absence of the signs of peristalsis. A friction may be early, within 12 hours of the onset. (*g*) Examination of the rectum—whether there is tenderness or any fulness between the rectum and the bladder. (*h*) The stools—the character, frequency, and the presence of blood or sloughs. (*i*) The urine—whether pain on micturition, frequency, &c. The onset of symptoms with pain about the bladder or in the penis is not infrequent when perforation takes place in the coils of the ileum in close contact with the bladder.

3. *General condition of the patient.*—(*a*) Facies—whether there has been a change in expression; the presence of a risus sardonicus, marked or slight; the onset of pallor or of sweating; and the signs of collapse, as in cold hands, cold feet, and slight dusky suffusion of the face. (*b*) The pulse—whether a sudden change in the rate and force; the very rapid, running, thready pulse may not be present for 24 hours after the onset of perforation. (*c*) The temperature—whether a sudden drop or a sudden rise. (*d*) Respiration—a sudden increase, which is not infrequent; whether shallow and sighing; (*e*) Hiccough—sometimes a symptom of onset, more frequently late, when peritonitis is established. (*f*) Vomiting—whether with the onset of the pain; it is more frequently a late feature, associated with the presence of the diffuse peritonitis.

4. *The blood count.*—The constant leukopenia in typhoid fever must be remembered. In a majority of instances in cases well followed there is a rise in the leucocytes, but this is not constant; they may be stationary. Also note the condition of the red blood corpuscles and the hæmoglobin. A decided drop may suggest hæmorrhage.

Sudden pain, increasing in intensity, and recurring in paroxysms, is perhaps the most constant symptom of perforation. With an increase of the pulse rate, distension of the abdomen, increasing pain on pressure, and a rise in the leucocytes, the diagnosis is rendered probable. A surgical colleague should be called early, so as to share the responsibility of the case. In a doubtful case the patient should be given the benefit of the doubt and operation should be urged. It is surprising how well a patient, even in a desperate state, may stand it. A general anæsthetic may not be needed. In many cases cocaine has been used, with the help, sometimes, of a whiff of chloroform. One of our cases recovered after three operations in two weeks, two for perforations and one in which a perforation was suspected.

From a surgical standpoint the whole question is reviewed at length by Keen in his "Surgical Complications of Typhoid Fever" and by Dr. Finney and Dr. Cushing in the recently issued Series III. of "Studies in Typhoid Fever," in Johns Hopkins Hospital Reports, vol. viii.

Medicine has become a medico-chirurgical art, and to practise successfully we physicians must know the work of the masters in surgery. In the diagnosis of disorders of the abdomen we are their pupils. In cases likely to become surgical the early association with a surgical colleague is both a duty and a pleasure.

Baltimore, U.S.A.

OBSERVATIONS BASED ON THE PROBABLE MODE OF FORMATION OF URINARY STONE, RELATIVE TO ITS RECURRENCE AND PREVENTION.

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IN an article which appeared in THE LANCET[1] entitled "A Further Contribution to the Surgery of Stone in the Bladder" I endeavoured to illustrate how progressive this work had been during the latter period of the past century and how intimately this was associated with the general adoption of the method of operating which Bigelow originated in 1878 and which has since been known by the name of "litholapaxy." I then purposely left for further consideration the only feature connected with this class of operations which seemed to require amendment or improvement. I refer to the liability to recurrence, which is admittedly larger after crushing as compared with other methods for removing stone from the bladder, though the mortality of the former is considerably less. In the paper referred to there were 101 cases of stone operated upon by litholapaxy alone, in addition to other methods. Of this number there were six deaths, whilst in 23 cases there was recurrence in some degree. The average age of these 23 persons was a fraction under 63 years. Several of the recurrences only amounted to the formation of some phosphatic gravel mixed with tenacious mucus, which was readily removed by the washbottle and aspirator. 17 of these persons had considerable enlargement of the prostate, 12 had pouched bladders, and the same number were more or less dependent upon their catheters at the time of operation. In two cases it seemed probable that recurrence was due to fresh descents of stones from the kidney and their retention within the bladder by the large prostate. In one of the fatal instances recurrence was traceable to a pouched bladder complicated with neglected urethral stricture and chronic suppurative nephritis. Hence it may be inferred that though a stone is successfully removed by operation this does not necessarily imply that the original cause for its production has thus coincidently ceased to exist.

From these statements it seems clear that the class of cases where the tendency to recurrence is greatest and most difficult to deal with, subsequently to the primary operation, is that in which, before stone formed, the bladder was more or less functionally and structurally spoilt by the obstruction it had been submitted to by enlargement of the prostate. It is hardly necessary to enumerate atony or loss of muscular power to expel urine, pouching, trabeculation, and cystitis, as being amongst these commoner effects.

The liabilities in its application to this class of cases seem in some degree to discredit the crushing operation in the eyes of the profession and public. Mr. Cadge in 1886 referred to it in the following terms: "This seems a heavy indictment to bring against lithotrity, but I am afraid there is no gainsaying it, and if so, it would be wrong to pass it over or make light of it. Many of these relapses might be prevented if the patients would observe directions and persevere with treatment."[2] I shall endeavour to show in detail, later, how we may succeed in giving effect to the latter statement.

On the other hand, in otherwise healthy persons without these prostatic and other defects the liability to recurrence of calculus in the bladder after operation is slight, as was also shown in the previous paper, and may usually be accounted for by the unexpected descent of a fresh nucleus from the kidney in the form of a small urate or oxalate

[1] THE LANCET, Nov. 12th, 1898, p. 1250.
[2] Hunterian Lectures, Royal College of Surgeons of England.

stone. This is a cause for recurrence which applies equally to lithotomy as well as to lithotrity, however performed.

The information we now mostly require relative to the removal of primary stone from the bladder under the conditions first mentioned of more or less permanent catheter-dependence and prostatic obstruction is not so much as to how quickly the operation can be effected, or how speedily convalescence follows, but as to what happens within the 12 months or thereabouts immediately succeeding it and concurrent with the abnormal states of the parts referred to.

The object of my paper is relative to the former class of cases, from which the greater proportion of stone recurrences after operation are drawn, and to show what has been done recently to diminish this tendency in them, and upon what principle or lines the latter may now be successfully attempted. Thus may we hope to lessen this liability and so to increase proportionately the efficiency of treatment. For it seems to be a more reasonable proposal to endeavour to extend the scope of an operation attended with so much to recommend it and so small a mortality than to substitute a more serious proceeding. Though lithotomy may be necessary for special reasons connected with the size or hardness of a stone or for other considerations, I can hardly see how its mortality, apart from other drawbacks, is likely to be diminished in the future, having regard to the advanced age and enfeebled powers of the persons upon whom it is usually practised. A repeated litholapaxy or a substituted lithotomy are in no sense comparable in elderly or feeble people. I purpose, therefore, to deal with the class of cases noticed as being most prone to recurrence. I will arrange my remarks under three headings: (1) the local treatment of the bladder following litholapaxy; (2) preventive treatment based upon the mode in which it is assumed that urinary calculi are formed; and (3) some illustrative cases.

I.—THE LOCAL TREATMENT OF THE BLADDER FOLLOWING LITHOLAPAXY.

For some time past I have acted on the rule of regarding all cases operated upon for stone as "suspicious" until a sufficient interval has elapsed to free them from this imputation. This, as I have urged, is the more necessary in cases where the normal functions of the bladder are impaired by prostatic obstruction. Here personal supervision should be carried on for a period after the individuals have passed from the hands of the operating surgeon into those of the usual medical adviser. Such observation should have reference to the fact that there is a time in the history of all stones forming in the bladder, as well as in others where the nuclei descend from the kidneys in the shape of small calculi, when they would have escaped through an ordinary adult catheter as used for normal dimensions. Hence when the condition of the urine after an operation remains

FIG. 1.

abnormal, or unexpectedly becomes so, as indicated by appearance, smell, or microscopical examination, the bladder should be carefully attended to until such states are either explained or removed. Tentatively even under these circumstances, or for moving and withdrawing minute concretions or calculi, which would soon develop into larger stones, and before they have furnished full evidence of their presence, the bladder should be washed out as for exploration. Direct evidence of the necessity for this is often furnished by the withdrawal of a number of small phosphatic concretions or other crystalline bodies which on examination with a magnifying glass may be seen arranging themselves so as eventually to form distinct conglomerations of calculous material. In the accompanying illustration (Fig. 1), which is copied from Sir Everard Home's Lectures (vol. vi.), minute crystals of uric acid may be seen held together by wavy shreds of mucus in course of consolidation by the process described by Rainey, and which will be again referred to later, of molecular coalescence. These are frequently met with and may be readily recognised. If not removed they are the sure forerunners of stone. To effect their removal a suitable syringe and catheter are required. I have tried many kinds of the former and other apparatus used for washing out the bladder, but the best is a metal syringe made to fit various sizes of catheters. This should work easily, without jerking and with sufficient power for the purpose. The syringes I refer to are not liable to get out of order and can be readily rendered aseptic and kept so. The best catheters are the larger-sized, smooth-bored, silk web ones, with an ample bevelled eye (Fig. 2). The larger the instrument the better, so long as it will enter the bladder without causing pain or too much tension. It is convenient

FIG. 2.

to have the end somewhat funnel-shaped, so as readily and accurately to fit the conical nozzle of the syringe. For this purpose, until the patient is used to the passing of the catheter, the urethra may be rendered less sensitive by the application of a 5 per cent. solution of cocaine with a Guyon syringe. For injecting, warm water—preferably soft water—answers the purpose very well. If the urine is offensive boric acid, sanitas, or a solution of permanganate of potash may be added. Whatever is used should be used freely. From two to four pints at one séance, or even more, may be injected in instalments once or twice a day, the object being to dislodge any concretions that pouches or sacs may contain and to obtain a perfectly clear return fluid. Hence the object should be to sluice the bladder rather than to wash it in the ordinary acceptation of the term. I have often found it answer to fill the bladder fairly full and then to cause the patient to lie or roll on his stomach. By this and such like devices concretions may often be got rid of in considerable quantities. In some cases, when the bladder is sacculated and to make doubly sure, it is well to wash out occasionally with the usual evacuator catheter and aspirator as used for removing débris after litholapaxy, which will also be found a test or sound as to the presence of any calculous concretion that may be unable to escape through the eye of an ordinary flexible catheter. By attention such as is here indicated the bladder becomes gradually less liable to form these concretions, as I shall show when I refer later to some illustrative cases.

Where the mucous membrane remains relaxed and spongy, as evidenced by an excess of mucus in the urine, which is often met with in bladders that have held stones for considerable periods, it is well, after the usual sluicing has been finished, to conclude the process by injecting, two or three times a week, a couple of ounces of a solution of silver nitrate (one grain to 12 ounces). This may be increased in strength provided it causes no pain. It is the best astringent for this purpose, but its utility is often marred by being used too strong. This quantity of the solution should be left in the bladder after it has been emptied of the water or lotion previously used. By this means, as illustrated in the previous article,[2] the process of molecular coalescence may be interfered with. It is not possible to indicate precisely how long the local measures described must be continued or how often repeated. The absence or presence of the symptoms referred to in individual cases should determine these points. I will therefore pass on to the second portion of my subject, which may be utilised concurrently with what has been described.

II.—PREVENTIVE TREATMENT HAVING REGARD TO THE PROBABLE MODE IN WHICH URINARY CALCULI ARE FORMED.

It is stated, and no doubt with some truth, that the causation of stone is connected with processes of physiological chemistry as yet imperfectly understood. This may be so, but it must be a matter of common observation, considering the complex nature of stone-formation as it occurs in the human body, that advantage is not generally taken on more definite lines to abort the process and to render it inoperative. For it would seem that the more complex and precise are the conditions for a constructive act of this nature, the less likely is it to happen casually, whilst the more open is it to attack from the direction I have ventured to indicate. We may, for instance, be only imperfectly acquainted with all the changes connected with some delicate experiment, but none the less do we recognise how its failure may be effected.

It may be remembered that in 1851 Rainey [4] of St. Thomas's Hospital demonstrated a mode of making calculi artificially by what he described as molecular coalescence. The more recent works of the late Dr. Vandyke Carter [5] and Dr. W. M. Ord [6] tend to confirm and extend these views. It will not be necessary to refer to Rainey's experiments at length. From their study and repetition the following conclusions may be drawn in relation to the special object of this communication:—(1) that for the production of calculi artificially by molecular coalescence precision in regard to all details connected with it is required; (2) that success is dependent upon the sequence or concurrence of several factors or fixed conditions; and (3) that molecular coalescence as described by Rainey explains the formation of calculi in the human urinary apparatus.

1. Apart from any theory of stone-formation it could hardly be supposed that there are two or more ways of concreting the constituting elements of a calculus any more than there are two ways of forming a gumma, an atheroma, or other pathological product. This consideration probably largely underlies our modern views of therapeutics. The difficulty in procuring this precision in the conditions necessary for the formation of stone and their concurrence doubtless explains the comparative rarity of the disorder relative to the population as well as various apparent anomalies connected with its geographical distribution. The following passage from Rainey indicates what has to be provided for in the laboratory. Less exaction than this could hardly be expected in the bladder or within an organised body.

> The process of artificial stone-making consists in introducing into a two-ounce phial, about three inches in height, with a mouth about one inch and a quarter in width, half an ounce, by measure, of a solution of gum arabic saturated with carbonate of potash. The specific gravity of the compound solution should be 1·4088, when one ounce will weigh 672 grains. This solution must be perfectly clear; all the carbonate of lime which had been formed by the decomposition of the malate of lime contained in the gum and also all the triple phosphate set free by the alkali must have been allowed completely to subside.

If a fixed medium is required for the formation of stone, and precision in regard, for instance, to specific gravity, to such circumstances as chemical reaction, temperature, rest, and movement, and possibly to other physical, chemical, or bacteriological details, it must be obvious how comparatively rarely these conditions can casually concur in the human body and how open one or other may be to disturbance. Such elaboration necessarily opens a field for reflection in the minds of those who have to regard this combination of events from a pathological point of view.

2. I do not think that it is sufficiently recognised that in the multitude of factors or conditions necessary for the formation of stone there is both wisdom and safety. Illustration is given of this by the following consideration. Assuming that eight or 10 grains of so insoluble a deposit as uric acid is daily excreted it would appear that there is not an individual in fair health who is incapable of forming a stone in a reasonable time provided that the other circumstances for concretion are favourable. If, for instance, a man in the habit of excreting 10 grains of uric acid a day were only to void half this with his urine and concrete the remainder it is obvious that he might form a stone of this material alone, weighing not less than half an ounce, in something like 48 days.

It is hardly necessary to search for causes of excess in the excretion of uric acid when the natural amount, placed under favourable conditions, is capable of forming a stone of this weight in so short a time. If the production of stone were dependent upon a single link rather than upon a chain of them it is probable that these disorders would be far more common and general than they actually are. It would seem that hitherto we have almost exclusively paid attention to searching for causes of stone arising out of excesses of their characteristic ingredients rather than in studying other contributory conditions of the urine which are capable of bringing this about by the consolidation of that which is natural in the excretion. Extremes of uric acid, for instance, do not appear alone to influence the formation of this variety of stone. Its excess in the urine has not been shown to increase this liability in certain districts. The East Indian on his diet of milk and cheese, pulse, lentils, wheat, rice, and the like, as Mr. Freyer [7] pointed out, would appear not to suffer from excess of uric acid but from the power he possessed of converting all that a strictly non-nitrogenous diet can supply into stone.

The earliest stage of gravel and stone-formation as it may occur within the kidney or other portion of the urinary apparatus is well indicated in the following extract from a report on the urine of a person who from time to time suffered in this way: "A large number [of cells] yet remain unaccounted for, and these are believed to be derived from the superficial layer of the mucosa of the renal pelvis. Crystals of free uric acid are also present both singly and collected into microscopic masses. These facts taken together represent a conjunction of circumstances which, with the occurrence of hæmorrhage after exercise, seems to leave little room for doubt as to the correctness of diagnosis [calculus]." It is not unreasonable to suppose that the initial step of stone-making which is here demonstrated might without much difficulty be disturbed.

3. So far as the applicability of Rainey's views to the formation of human urinary calculi is concerned I will only quote the following passage from the late Dr. Vandyke Carter's work in support of it, as I am not aware that this has ever been denied.

> Regarding the probabilities of the case, it seems to me that the necessary conditions for the operation of molecular coalescence may at times well occur in the living human subject. Thus, an excess of mucus, perhaps altered in character, would furnish a colloid medium with which uric acid, the urates or oxalates, could combine in the manner described.[8]

On the assumption that Rainey's process explains the formation of stone as observed in man it would appear that molecular coalescence is capable of being disturbed or aborted by interference with the conditions indicated under the foregoing conclusions (1 and 2). This act differs essentially from what has already been attempted by dissolving stones after they have once formed. It is, however, not improbable that some remedies which have been in vogue for the latter purpose—for instance, those containing alkalies—owe their claims to this distinction by seeming to

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[2] THE LANCET, Nov. 12th, 1898, p. 1250.

[4] Precise Directions for Making Artificial Calculi. Transactions of the Royal Microscopical Society, vol. vi. On the Mode of Formation of Shells of Animals, of Bone, and of several other Structures, by a Process of Molecular Coalescence, demonstrable in certain Artificially formed Products (Churchill, London, 1858).

[5] The Microscopic Structure and Formation of Urinary Calculi (Churchill, London, 1873).

[6] On the Influence of Colloids upon Crystalline Form and Cohesion, with Observations on the Structure and Mode of Formation of Urinary and other Calculi (Stanford, London, 1879); also Transactions of the Royal Medical and Chirurgical Society, March 9th, 1875.

[7] Transactions of the Medical Society of London, vol. xx., p. 78.

[8] Op. cit., p. 39.

prevent further formations on the grounds which I am advocating without in any material way diminishing the size of that which had concreted prior to their use. Preventing construction and effecting dissolution represent two different processes.

There are some interesting points bearing on this subject connected with drinking-water as used for ordinary purposes as well as medicinally. No one, I think, can doubt the efficacy of such spas as Contrexéville, Wildungen, Vichy, and others that might be mentioned, relative to calculous affections. During a stay which I made at the first-mentioned place two years ago I was much struck with what others have also noticed. In some instances the volume of water taken in conjunction with the exercise no doubt favoured the expulsion of small calculi by the mechanical act of flushing the part containing them. In others, though it did not appear to diminish the amount of uric acid voided, it seemed to prevent it collecting into small masses of crystals—that is to say, the latter showed a tendency under the influence of the waters to isolate rather than to aggregate. This was a matter of common observation with some of the habitués of the place. It seemed likely that in this way the process of stone-forming might be interfered with in its initial stage. Shortly before I had been struck with Mr. Cadge's[9] observations on the absence of milk as a food for children in the eastern counties of England relative to the prevalence of stone. I then made some observations on the effects of hard water used for drinking purposes under these circumstances, and though they were somewhat crude some results were obtained which appeared to be significant. Various samples of urine obtained from persons using such water were found to contain increased amounts of mucus, which were most marked in children. This test has since proved useful in assisting to determine the suitability of some hard waters for drinking purposes. Where the amount of mucus thus deposited is excessive it may be taken as tending to indicate that the water in question is not desirable, especially in the case of persons liable to gravel and urinary deposits. In connexion with this it is interesting to note that a change in the water-supply of a district—for instance, the substitution of some distant reservoir for local wells—has been found to alter substantially the liability of the inhabitants so supplied to stone and gravel.

These considerations suggest that an increased quantity of urinary mucus may provide a colloid for molecular coalescence and to this extent furnishes a necessary factor for concretion. Nor are such influences as I have mentioned confined to the use of certain waters, for they will be found similarly associated with various articles both of food and medicine. For instance, I have known persons who had been in the habit of passing small urate and oxalate calculi, attended with more or less pain and other symptoms, who apparently ceased to do so after taking from time to time short courses of such drugs as turpentine, sandal, copaiba, and others that might be mentioned—in fact, from the use of almost anything that has a distinctive and special action on the urinary excretion. I do not wish to be understood as expressing a belief that such drugs could dissolve a stone, whether small or large, when once formed or wherever situated, but in numerous instances their use appears to have been followed by a cessation of these discharges without necessarily interfering with the natural or excessive elimination of uric acid in this excretion. The presence of certain constituents of these drugs is judged as merely interfering in some way with the concretion of the latter into stone. Thus, as stated, may be explained the action of certain remedies, patented and otherwise, which have gained, properly or undeservedly, more or less notoriety in preventing the formation of stone and gravel. Some of these remedies which have come under my notice appeared to contain an ingredient which is admittedly capable of exercising some influence on the urine and may thus have been the means of disturbing a formative process in which this excretion was primarily implicated. Various alkaline salts formed the basis of some of them. A preparation called "Dutch drops" has for many years been a popular one.[10] It is stated to consist of "oil of turpentine, tincture of guaiacum, spirit of nitric ether, with oil of amber and cloves," the first ingredient being most likely the potent one in preventing crystalline concretion by molecular coalescence occurring as already suggested. Similarly the glycerine treatment[11] of renal concretions of uric acid may be explained.

An uncleanly condition of the urine, particularly of residual urine, where the individual is more or less dependent on the use of a catheter, is often a contributory cause of ammoniacal decomposition and the recurrence of stone after operation. I say a contributory cause of calculus, as some seem to doubt that a phosphatic stone can be formed without the presence of a nucleus upon which concretion can take place. Though this is frequently the case, it is not of universal application. Phosphatic calculi not rarely form in this way in the bladder, as in cases of advanced urethral stricture and sequential bladder changes, without any discoverable nuclei other than the concretion of the crystals of triple phosphate which the microscope readily discovers in abundance. The process of molecular coalescence is sufficient to explain this. Much may be done under these circumstances to prevent urinary decomposition by the use of the catheter and syringe as already referred to. Within the last few years improved means for sterilising the urine have also been largely and successfully employed. Effect is given to this on the same principle as milk, butter, and some food products liable to change under atmospheric and other influences are rendered more stable and less likely to undergo decomposition by containing certain proportions of boric acid or other innocuous antiseptics.

Some valuable drugs have been introduced for sterilising urine during its flow from the kidneys downwards and its storage in the bladder. Sandal wood, cubebs, and the like, doubtless owe some of their medicinal properties to their effects as bactericides, but they are nauseous and uncertain in their action. Some years ago I drew attention to an easily soluble and digestible salt of boric acid which often answers admirably and is much used by itself or in combination for this purpose. It is prescribed in teaspoonful doses in a tumbler of water, and may be taken frequently under the name of the borocitrate of magnesia. Many people use it with as much freedom as they do common salt with their food, as beyond sterilising the urine imperceptibly it appears to have no other action. Salicylate of sodium, benzoate of sodium, benzoate of ammonium, hyposulphite of sodium, are also useful sterilisers, which may be prescribed separately or in combination. Lastly, I would mention amongst this group a more recent introduction, under the name of urotropine, which is a valuable addition to it, and has in some instances a remarkable power of clearing urine and keeping it so. It is stated that its action is due to liberating formalin when mixed with the urine. By such means as these it is possible in some degree to wash out and to disinfect the pelvis of the kidney and the ureter, which in cases of chronic prostatic obstruction is often required, as much as, or even more than, the bladder. Thus a contributory cause of stone may be averted.

Of the effects of a solution of silver nitrate in preventing molecular coalescence and the formation of stone no more striking evidence can be afforded than those instances referred to in my previous paper.[12] In those cases by the injection of a weak solution of this salt foreign bodies introduced into the bladder were prevented from becoming coated with phosphates. This has been utilised in practice in connexion with accidents arising from catheters where delay in removing broken portions from the bladder was unavoidable.

III.—Illustrative Cases and Remarks.

I shall endeavour to illustrate some of the foregoing remarks by cases in which recurrence of stone in the bladder after operation was successfully treated, mainly by local attention and partly by instances where other influences were brought to bear upon formations and reformations not necessarily vesical in their nature nor requiring operation. Amongst the latter are included cases of renal gravel and stone, which may be said to form the largest proportion of urinary calculous affections. This will entail dealing with this aspect of the subject in two sections—viz.: (1) illustrations where the treatment was for the most part local; and (2) those where other influences were employed in aborting the stone-forming process.

1. Of the 23 cases of recurrence of stone referred to in my previous paper as having occurred after operation in elderly men, 12 patients are known to have had no further

[9] The Etiology of Stone in the Bladder, British Medical Association, Norwich, 1874.

[10] Pharmacologia, fifth edition, 1822, by Dr. J. A. Paris, F.R.S.

[11] Medical Chronicle, January, 1900; and Brit. Med. Jour. (Abstract 137), 1900.

[12] THE LANCET, Nov. 12th, 1898, p. 1250.

symptoms of recurrence for periods extending over from two to seven years. These persons were for the most part treated by local measures alone, as described in the earlier part of this paper, and as far as can be ascertained they have ceased to concrete stone. It has not been possible to follow up all the remaining cases, and but little reliable information can be ascertained about them. I am disposed to think that several of the patients have had no further recurrence, otherwise I should have heard of it. A few are hospital patients who cannot be traced. However, the 12 out of the 23 who are known to have remained well is a fair proportion for basing these remarks upon.

CASE 1.—The patient was a man, aged 79 years, whom I saw in 1890. He had a remarkable family history of stone, his grandfather, father, paternal uncle, and himself all having suffered in this way. A large prostate rendered the operation not an easy one. He had five recurrences, which were all treated by litholapaxy. The last occasion was in June, 1893, after which the process of washing out the bladder daily as previously described was commenced. Afterwards I sent him to take the waters at Harrogate, where he remained under the care of Dr. G. Oliver. Writing to me some months after this course he stated: "The urine is clear, acid, and free from deposit, and I am able to go about without my catheter in my pocket, a thing I never did for years past." He died at the end of 1898, without further recurrence, at the age of 87 years, having led an active life to within a few months of his death. My belief is that the local treatment and the sulphur waters effected the twofold objects desired in the manner suggested. The original calculus crushed was a triple phosphate weighing 53 grains, and those that recurred were of the same nature. The later operations rarely detained the patient to the house for more than a few days. In this case the urine was so continually alkaline and ammoniacal that I finally tried the artificial induction of the lactic fermentation, apparently, as in other instances, with success in preventing the precipitation of the mixed phosphates. This was first suggested by the late Sir William Roberts,[13] the object being to bring about and maintain an acid reaction of the urine by overpowering the ammoniacal tendency until the bladder, so to speak, had time to return to a more normal condition.

CASE 2.—In this case a man, aged 60 years, was seen by me in 1890 with Mr. F. Grant. A phosphatic calculus weighing two drachms was removed by litholapaxy in March of that year. During that year and the subsequent year he suffered from several recurrences which required removal by the lithotrite and washbottle. This entailed his giving up an active professional life. In 1891 he commenced the systematic method of washing out described and has had no further return since. Writing to me in 1899 he says: "I still, however, go on with the washing out, as I should not feel safe without it, and it is no trouble." He has resumed his work as usual. As in the previous case, the patient told me that he had been frequently advised to submit to a lithotomy and bladder drainage. He remains quite well.

CASE 3.—In the following case, though no recurrence of the stone took place, it will be seen how this was probably averted. It was that of a man, aged 67 years, whom I saw in 1893 and from whom I removed a stone by litholapaxy weighing one drachm. There was some prostatic enlargement. By regularly washing out the bladder in the way described from time to time with a solution of boric acid, masses of shreddy mucus containing triple phosphate crystals were frequently removed. Under the use of silver nitrate solution these eventually disappeared. In 1898, in spite of attention of this kind, considerable difficulty was experienced by him in using his catheter by reason of further enlargement of the prostate, cystitis, and repeated attacks of epididymitis. Again his urine became largely charged with triple phosphates, and muco-crystal strings and concretion appeared imminent. In 1899 double vasectomy was performed. This permitted a more thorough irrigation of the bladder with the large-eyed catheter and syringe, and the urine speedily recovered its normal condition, and the patient was again able to resume an active outdoor life. In getting rid of the phosphates and the excess of mucus, in addition to the local means mentioned, the sterilisation of the urine for stated periods of a week or ten days, from time to time, greatly assisted in effecting this and securing an acid reaction of the urine. Thus the almost certain recurrence of stone was averted. The steriliser used consisted of urotropine and benzoate of ammonium, five grains of the former and 15 of the latter drug in an ounce of chloroform water, taken thrice daily after food.

It may be observed that where at the time of operation and subsequently, as the consequence of prostatic enlargement, patients are more or less dependent upon the catheter, the local treatment by washing out with suitable instruments for preventing re-formation of stone entails little or no additional inconvenience. Where prostatic complications of this kind do not exist, and there is no such dependence on artificial aid for withdrawing the urine, either at the time of, or subsequently to, the litholapaxy, the precautionary methods adopted are of the kind employed in the following case.

CASE 4.—A man, aged 64 years, was operated upon by litholapaxy in January, 1897, when an oxalate-phosphate stone was removed weighing nearly two drachms. He was under observation for 10 days. In October, 1899, nearly three years afterwards, I again saw him with symptoms of stone, when about the same quantity of urate calculus was removed by litholapaxy, the patient remaining under observation for seven days. It seemed probable, from the entirely different character of the débris removed, that the latter stone was formed on the nucleus of a fresh descent from the kidney. There was no distinct symptom of renal colic, though those of vesical stone had been in existence for the previous two or three months. In the past year he has been tested once a month with the large-eyed catheter and syringe as described. For the next 12 months the test will only be applied every eight weeks, unless occasion arise to indicate its more frequent use. He takes, in addition to this, five minims of oil of turpentine every night for the first 10 days of each month, and some urotropine and benzoate of ammonium in a draught on the following morning. The latter expedient is with the view of aborting any tendency to stone-formation taking place in the kidneys, where the nucleus of the vesical stones that were crushed came from. His prostate is somewhat enlarged and would probably trap any fresh descent from the kidney in the shape of a small urate or an oxalate calculus. For these reasons the double precaution has been now taken for the past year, and he is, as far as it can be judged, free from stone. Having regard to the past it will be desirable to continue these precautions in a modified degree for a year or so longer. Otherwise he is entirely independent of the catheter.

The cases which serve as the basis for these remarks were for the most part seen and dealt with in connexion with a record embracing my operations for stone during 1890–97. Since the last-mentioned date the views and practices here expressed and illustrated have had fuller effect given to them than in the previous series. The results, so far as they have gone during the three years ending with 1900, have tended to support their expression, as recurrences after operation have been less frequent, whilst the after-treatment of litholapaxy has been placed upon a more satisfactory basis. I have waited until a sufficient time has elapsed to speak with some assurance on these points.

I admit that it is difficult, if not well-nigh impossible in some instances, to give full effect to the mechanical details which are here described. Failures, therefore, must still follow and be expected, and it is these, however rarely they occur, that will make us turn occasionally to the old controversy—Would not a lithotomy have been better in the first instance? Possibly it might have been, but yet there remains something to weigh even against this. Individuality on both sides must receive some consideration in doubtful cases. The broader lines which govern the selection of lithotomy or lithotrity are in the majority of instances sufficiently obvious and applicable.

2. Passing to the second group of cases, which, for the most part, include voidable calculi and gravel voluntarily expelled by the act of micturition, formed and recurring independently of operations, I will offer a few illustrations as to how it seems probable that their construction may be interfered with. Reference has already been made to what has been observed at Contrexéville and elsewhere as tending to support this view, as well as to some indications following the use of different kinds of drinking water which appear to be significant. This brings us more directly in touch with the administration of drugs for the purpose under consideration.

The formation and recurrence of stone and gravel, terms which are only used as broadly indicating extremes of

[13] A Case of Lactic Fermentation in the Bladder, with Suggestions for the Use of the Lactic Fermentation as a Counter-septic Agent in Cases of Ammoniacal Decomposition of the Urine, THE LANCET, Feb. 25th, 1893, p. 405.

concretion so far as size is concerned, are met with in (1) urines that are more or less foul or that show evidence of decomposition; and (2) urines that are apparently normal.

1. The signs of decomposition to which importance should be attached are twofold: (1) the presence in the urine of flocculent masses of mucus containing crystalline material which may be seen by the microscope or by the naked eye, or may even be recognisable by the touch; and (2) an abundance of triple phosphate crystals in the urine as determined by microscopical examination of the excretion. These suffice to indicate a liability to the formation of vesical stone which should not be neglected, more particularly in the case of persons who have already suffered from calculus or have undergone operation for it.

Apart from the employment of local measures, which were considered in an earlier part of this paper, modern therapeutics have added to our resources some important medicines which have already been referred to as sterilisers. Some of these may even be used with advantage as articles of diet, of which the borocitrate of magnesia is an example. Many instances might be quoted illustrating their power of removing those signs of urinary deterioration to which allusion is here made. It is not necessary to refer at greater length to them as they have already been named. By their internal administration in numerous instances the urine may be prevented from undergoing that kind of decomposition which enables certain products of the latter, by molecular coalescence, to form phosphatic stones of considerable size in a short time. I will pass on to say a few illustrative words relative to the second condition.

2. Urines that are apparently sound though excreted by individuals who are liable to suffer, not infrequently or lightly, from attacks of renal colic and stone, and are also exposed to some risk arising from the detention and increment of the latter in the bladder. These are the calculi which are usually of renal origin, and are best open to attack in the earliest stage of their formation. My attention was called some years ago to some cases of this kind due to the descent of small calculi from the kidney downwards, when, after the paroxysm of pain was over, the patients were treated by various drugs which were supposed, with some reason, to be chiefly eliminated through this system.

CASE 5.—The first instance was that of a man who had been in the habit of passing uric acid calculi for several years before I knew him. Eight years ago I crushed and evacuated a small calculus for him which had failed to escape from his bladder. It was only a small stone and confined him in the house for three or four days. Prior to this he must have passed from time to time over 100 calculi of the same kind, though rather smaller, which I now have. I have seen him only once since, about four years ago, when he was in excellent health. With the exception of three or four somewhat similar calculi which were passed within a few weeks after the operation referred to eight years ago, he told me that he had seen no more. Further, he informed me that he attributed this not to any change in diet, but to his taking, on the advice of a friend, five minims of oil of turpentine night and morning for the first week of every month. When I saw him four years ago he told me that he had not changed his residence or his habits since the operation four years previously, but I think that he has done so since. I was struck at the time by this statement, but was disposed to regard it merely as a coincidence which could not be accepted without something more approaching a verification of the conclusion which the man had arrived at. However, I am disposed to think that there is something in it. If the conditions necessary for the formation of a stone in the kidney, or for that matter elsewhere, are fixed and unalterable, why should not the inference be correct? There is nothing irrational in the belief that this temporary addition to the man's diet, unpalatable as it might be to some, spoilt the process of stone-formation as another might favour it. Without pursuing this reasoning further I made use of the information thus given to me.

Trials have been made during the last three years with such drugs as sandal-wood oil, copaiba, cubebs, and turpentine, much on the same lines as those detailed in the case narrated. The cases in which these drugs were employed in this way were those of persons suffering from the passage of oxalate and urate concretions, commencing their use about the time when the paroxysms of pain connected with the expulsion of these bodies were over. Care was taken to regulate the doses so as not to interfere with the digestion of the patient. A course of a week or 10 days every month was the period usually advised. The results were very satisfactory in many of the cases, the use of the drug selected apparently resulting in the cessation of further formation of calculous concretions. Sandal oil and oil of turpentine were the drugs which were found best adapted for this purpose. The following case, which occurred about the time I commenced these investigations, interested me as showing the way in which calculi could be influenced artificially.

CASE 6.—The patient was an adult male upon whom I operated by litholapaxy three years ago. He had a phosphatic stone in the bladder of about the size of a small pigeon's egg, the result of damage done to the bladder by a chronic urethral stricture. He was operated upon at St. Peter's Hospital under gas and ether administered by Mr. W. Braine. On washing the fragments of stone out of the bladder after crushing it was noticed that they were all of a deep blue colour. I was at a loss to explain this at the moment, and so were others who were present in the operating theatre. It turned out on further inquiry that for three weeks previously the patient had been taking for his bladder symptoms a medicine containing methylene blue. He made a good recovery.[14]

In an interesting paper relating to stone formation Dr. Lindley Scott[15] has recently shown how oxalate of lime may be artificially resolved into other combinations and so be excluded in this form from the urine. Thus the formation of this kind of stone may be rendered inoperative.

It is hardly necessary to say in connexion with the tendency to the formation of urinary gravel and stone that morbid conditions of the excretion as indicated by an excess of normal constituents, or by the introduction of elements which are foreign to the urine, should as far as possible be dealt with on general principles which are sufficiently recognised and provided for. Excesses of urates and uric acid, for instance, as observed in the gouty, and the introduction into the urine of oxalates, cystin, and the like, are indications which will not be allowed to pass without special notice and attention. My contentions, however, are for the most part based upon proportions which may be normal.

I will briefly refer to two points connected with the processes of removing stone from the bladder which have a bearing upon the subject of recurrence.

In the first place every care should be taken, especially in the case of crushing operations, to remove all fragments of stone from the bladder. It should be remembered that the bladder of a man obstructed by an enlarged prostate in front of it, not uncommonly more closely resembles the section of a coarse bath sponge than the inside of a tea-cup. Thus the difficulties of clearing the former are considerably increased as compared with the latter. But the successful accomplishment of this is not often unattainable and should be first demonstrated to be so before crushing is put aside on this ground.

In the second place, care should be exercised, whether lithotomy or lithotrity is selected, to avoid introducing rough scar-tissue into the bladder. It is just as liable to cause stone concretion as any other foreign body. I illustrated this in the Surgical Section at the meeting of the British Medical Association in 1900. One reason for the success and comparative rarity of stone recurrence noted in earlier days by lithotomists who practised median and lateral lithotomy

[14] It would be interesting to know, particularly in regard to further developments, if any observations have been made as to whether the colour of a urinary calculus, apart from the nature of its chemical composition, exercised an influence on the shadow cast by the x rays. For instance, if a black oxalate stone gave a more pronounced outline than a similar one of a lighter colour, such information would be of value. It occurred to me that if depth of colour intensified the shadow thus produced it was possible to bring this about artificially. In the case I have recorded I found that a white phosphatic stone was deeply stained blue by the patient having previously been treated by a course of methylene blue (tetramethylthionine chloride) for cystitis. I have seen other vesical calculi stained a deep indigo colour in this way. I have wondered whether different degrees of intensity observed in radiographs of oxalate of lime calculi in the kidney were explainable on this principle. If so, a practical point in aiding their diagnosis in this way is suggested. I venture to raise this question, as feeling the great importance of endeavouring to discover calculi in bladders distorted by enlarged prostates without the use of a sound, and for calculi in the urine passages which are inaccessible to the touch. A stone in the bladder when detected by the sound under these circumstances should be at the same time removed. This is not always convenient. A stone detected by radiography permits of a delay without detriment, or reflection upon the process employed.

[15] Brit. Med. Jour., Oct. 13th, 1900.

correctly was that they introduced no scar-tissue afterwards within the area of the bladder. When I was engaged in teaching pathology and surgery I had several opportunities of demonstrating what would seem to support this statement. I have more than once scraped off phosphatic concretions from the rough uneven inner scar of a suprapubic cystotomy.

In preparing this paper, the subject suggested itself from a critical examination of my own work, which was not unconfirmed by that of others who also possessed ample means of obtaining information. It appeared to me that the liability to recurrence after lithotrity, or litholapaxy as it is now called, was larger than it should be and might be reduced. And further, that the whole subject of stone-formation and recurrence, relative to prevention and treatment, was capable of being reconsidered and dealt with on more precise and definite lines. This, I think, will be admitted to be the case, and that in attempting to do so we may fairly hope where surgical interference proves necessary to extend the limits of the crushing operation rather than to curtail them.

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ON A CASE OF MYASTHENIA GRAVIS, PSEUDO-PARALYTICA; DEATH; NECROPSY; REMARKS.

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UNTIL Dr. Buzzard published his important clinical lecture on this curious and formidable disease[1] it was probably hardly known by name in this country. More recently, in the Summer Number of *Brain* for 1900, Dr. Harry Campbell and Dr. Edwin Bramwell have supplied a critical digest of the 60 or 70 cases hitherto recorded. Of these 11 only have been described by English observers, mostly under different synonyms. Yet the complaint may be less rare in England than it would seem to be. Dr. Buzzard mentions his impression that in addition to the four cases which form the subject of his lecture he has "seen with his eyes though failed to recognise the significance of not a few other examples of the disease." A similar impression may be shared by some of his readers with regard to their own experience. Most diseases have gone through a phase in which they are known though nameless. They are not recognised as entities until a comprehensive title has been invented for them, and this has been the case with myasthenia gravis. For a full bibliography of the subject reference may be made to the excellent monograph by Dr. Campbell and Dr. Bramwell. The typical symptoms and course of the disease are well illustrated in the following case (shown before the Clinical Society of London, February, 1900).

The patient a woman, aged 23 years, single, a waitress, was admitted to the Hospital for Epilepsy and Paralysis, Regent's Park, on Jan. 26th, 1900. She complained of general weakness, but in particular of difficulty of speech and deglutition. Her family history was said to be good. A paternal aunt was epileptic. (A sister shortly after this patient's death had a bad attack of chorea gravidarum from which she recovered.) As to her personal history she was always considered healthy until the present illness. She had been a waitress at various restaurants for the last four or five years and had been accustomed to work as many as 12 hours daily. With regard to her present illness, in December, 1899, she complained of always feeling tired, and towards the end of the day she found that she could not speak distinctly owing to spasm or (?) loss of control over her lower jaw. She used to make light of it, saying, "My jaw is refusing duty." Perhaps this symptom was akin to the jaw clonus noted in Buzzard's first case. In July, 1899, the difficulty of speech increased and was more frequent, and deglutition was also affected. She sometimes choked whilst trying to swallow solids and liquids returned through her nose. She also noticed that she could not fully close her eyes. Her trouble in articulation and deglutition gradually became more serious and also the general sense of fatigue. The fingers of the right hand often "dropped" so that she could not write or sew. All the symptoms were worse after exertion or if "put out" or "upset" in any way. There was no history of sore-throat. She remained at work until Jan. 16th, 1900, when she first attended hospital. Her condition then was somewhat alarming. She could hardly walk without assistance and her speech was quite unintelligible; her mother had to interpret all she said. When she tried to swallow water it came back at once through the nose. She could not shut her eyes. She was sent home with instructions to remain in bed until she could be admitted to hospital. On admission a week later her condition was considerably improved.

On admission she was found to be a slightly-built, delicate-looking girl, pale but not markedly anæmic. She had paresis of the orbicularis oculi and oris, of the tongue, soft palate, and probably of the pharynx. She could frown and elevate her eyebrows, but could not fully close her eyes. In the attempt to do so the eyeballs were turned up, exposing about half an inch of conjunctiva in the right eye and somewhat less in the left. She could offer no resistance to passive elevation of the upper eyelids. There was no ptosis. Even after prolonged up-looking the eyes remained fully open. Ocular movements were perfect; there was no nystagmus. The pupils were equal; their reaction was normal. The optic discs showed some pallor of the nasal half. There was no restriction of fields of vision. The mouth was weak-looking, half open, and the labial fissure was widened. At times the upper lip was elevated and the naso-labial fold was accentuated, giving her a disagreeable and scornful expression. But her aspect generally was melancholy, although she was not really so. She could not purse her lips up or blow out a candle unless she first held her nose. She could not whistle; but a year before, she said, she could do so "like a boy." She could not blow up her cheeks at all unless the anterior nares were first closed, and even then air readily escaped through the mouth owing to weakness of the orbicularis oris. The other muscles of expression were not paretic. There were no tremors and no wasting of the face. The tongue was protruded straight and was not obviously wasted. It was slightly tremulous after prolonged protrusion, but the tremors were not fibrillary. She could execute all other movements with it but could not curl it longitudinally. The associated action between the orbicularis oris and transverse lingual muscle was lost. The soft palate hung level and moved on phonation and respiration, but not to a normal extent. After speaking or reading aloud for a time the palatal movement was lessened. Speech was weak, indistinct, and markedly nasal. After talking or reading aloud for a couple of minutes she was almost unintelligible. The speech resembled that of persons with a cleft palate; air was heard to escape through the nostrils with each word. It was rendered still more indistinct by the difficulty in sounding labial explosives *b*, *p*, and the gutturals *k*, *g*. The vocal cords acted normally. No signs of fatigue after phonation were detected. Cough was forcible. Deglutition was rendered difficult by loss of prehensile power in the lips. She could not suck a spoon clean. Food tended to collect on the right side of the cheek, but not on the left, where she had lost her lower teeth. She had also difficulty in controlling the movements of a bolus of food with her tongue; she swallowed it slowly and with obvious effort, whilst liquids, as mentioned before, were often regurgitated through the nose. There was no apparent weakness of the masseters or pterygoids or elevators of hyoids. The dysphagia and dysphonia varied greatly. On first waking she could talk and eat fairly well; but towards the end of the day, or if tired, her difficulties increased. With regard to muscular power, the hand grasp (recorded by dynamometer) was as follows:—R. = 30; L. = 40. There was the same result after four trials. She could resist passive movements of the elbow, wrist, and shoulder and of the ankle, knee, and hip with a fair amount of force; but after a short time her resistance became intermittent. Actual loss of muscular power was not apparent except after exertion. After a night's rest she sat down, rose, turned, walked, and moved generally without obvious effort. None of the muscles were atrophied. As to the reflexes, the soft palate and pharynx moved on stimulation, but the reflex actions were perhaps diminished as she was very tolerant of laryngoscopic examination. Tendon and superficial reflexes were normal. The knee-jerks were not lessened after repeatedly tapping the

[1] Brit. Med. Jour., March 3rd, 1900.

patellar tendon. There were no tremors nor ataxy. The muscular sense was accurate. Sensation was everywhere normal. The thoracic and abdominal organs seemed healthy. Nothing abnormal was noticed in the pulse and respiration. She did not complain of breathlessness after exertion, but only of feeling generally tired. The sphincters acted normally. The bowels and menstruation were regular. The urine contained neither albumin nor sugar and was normal in quantity and appearance. Its toxicity had not been tested. With regard to electrical reactions, there was slight diminution to faradaism. There was no reaction of degeneration. As to myasthenic reactions, the right biceps was exhausted and ceased to react to faradaism in about one minute, contact being broken from 60 to 75 times per minute. The left biceps was exhausted in about one and a half minutes. Response to the current however, was restored in from 15 to 20 seconds if the application were stopped as soon as exhaustion occurred. If continued after exhaustion the period of inaction was increased. In the face the orbicularis oculi and oris were exhausted much more easily than the other facial muscles. The myasthenic reaction was far less readily produced in the muscles of the lower extremities than elsewhere.

Progress.—At the end of three months' observation the general condition had greatly improved. There was now no actual inability to swallow nor regurgitation. Speech only became indistinct after reading aloud for several minutes. The right eye could be almost closed, and resistance to passive elevation of the eyelids was more apparent than it had been. The mouth looked smaller and less flabby. She felt stronger and had gained three and a half pounds in weight. Treatment had been by rest and the administration of liquor strychniæ.

Subsequent history.—She left the hospital at the beginning of May, 1900, and went to Tunbridge Wells, where she remained until a severe relapse occurred on June 15th. Her mother believed that the relapse was due to mental trouble. An engagement to marry had been broken off and her *fiancé* had gone to the war in South Africa. When seen on June 19th her condition was much worse than it had ever been. She could not swallow water even in sips. Her speech was quite unintelligible and the palatal movements were more sluggish than before. Her mouth was full of glairy mucus and saliva which she could neither swallow nor eject. Her neck muscles were weakened, so that her head fell backward if she inclined it beyond the centre of gravity, unless she supported it with her hands. She was very depressed and tearful. On July 3rd the weakness of the neck muscles had passed off. On the previous day she had choked whilst trying to swallow a small piece of bread-and-butter. She could neither get it up nor down, but her mother succeeded in dislodging it with her finger. On the whole she seemed rather better. She was not seen alive at hospital again, but Dr. Edmund Holland of Regent's Park has kindly given particulars of the conclusion of the case.

On July 10th she started for a short walk, but soon returned, complained of great fatigue, and finally took to her bed. On the night of the 11th Dr. Holland was called to see her and found her suffering from a bad attack of dyspnœa. She was fighting hard for breath and he thought that she was dying. The attack, however, passed off in about an hour, after which she slept quietly. The next morning she was breathing easily, but she could not sit up in bed without assistance. She had only taken about a pint of liquid nourishment in 24 hours for several days, and deglutition was getting more and more difficult, so he ordered her to be fed by nutrient enemata only. On July 14th general weakness was much more marked. After talking a little her voice became reduced to a whisper. On the 15th the diaphragm was apparently paralysed, as she could not cough to clear her throat of mucus without pressing her hands on the lower ribs and epigastrium. She died quietly about 3 A.M. on the 16th. Consciousness was maintained until an hour before death, which was probably due to respiratory failure and gradual exhaustion.

Necropsy.—A post-mortem examination was made 30 hours after death. The body was slight in build but not emaciated. Rigor mortis was well marked. All the internal organs seemed healthy and also the brain and spinal cord.

Microscopical examination.—Dr. H. Campbell Thomson reports as follows: "The cord, medulla, and portions of cortex were hardened in formalin (5 per cent.), cut with a freezing microtome, and stained with carbol-thionin. The cells of the hypoglossal and glosso-pharyngeal nuclei for the most part appeared normal; in some, the chromatophile granules were not differentiated, and formed a homogeneous staining which, however, was not darker than normal. There was no loss of chromatophile bodies noticed in any of the cells. Cells from the spinal cord at the level of the third cervical roots showed similar changes. No other changes were detected either in the cells or in the other tissues of the cord. Examination of the cortex and of the nerve trunks gave negative results." Dr. Thomson considers the changes described as merely due to slight variations in staining and that the results of examination as a whole are negative. Thus the most modern methods of investigation only confirm the accuracy of Sir Samuel Wilks's description of the first case on record in this country, as one of "bulbar paralysis without anatomical changes."[2]

The motor-nerve endings in muscles were not examined in this case because portions of muscles removed for that purpose were unfortunately lost. Yet I venture to think that examination of them would probably have been also negative, for the variation in symptoms shows that the motor end plates or terminals in muscles, the most delicate portions of the neurons, cannot be permanently disorganised. This is implied by the descriptive term "pseudo-paralytica," which forms the sub-title of the disease. Myasthenia gravis is, in fact, a condition of toxæmia. The toxin, whatever it be, appears to have a selective and narcotic action on the motor neurons as a whole, and when the neurons attacked are vital, death is the result, in accordance with the virulence and intensity of the poison at work. Of the nature and origin of the toxin causing myasthenia, little or nothing is known. It is probably endogenous rather than exogenous, because the disease does not occur in epidemics or attack members of the same family simultaneously. It cannot be traced to any definite antecedent complaint. The supposed exciting causes have been so many and so various, yet so often altogether absent, that we cannot attribute to them any important part in the causation of the disease beyond that of weakening the patient and rendering him susceptible.

Origin of toxin in muscles.—The fatigue phenomenon suggests that the muscles are rendered inert by the products of their own activity. But Dr. Bramwell showed that this is not so by an ingenious experiment. He found that massage of an exhausted muscle (biceps) did not diminish the period of rest required before it resumed activity. Had the poison been muscle-bred, massage would have dispersed it. The absence of digestive disturbance is against a gastro-intestinal origin. Examination of the urine for poisons having a curara-like action gave a negative result in one of Buzzard's cases.

Origin in ductless glands.—The extreme muscular prostration which attends Addison's disease has suggested that the suprarenal bodies may also be affected in myasthenia gravis. The uselessness of suprarenal extract as a remedy does not disprove that this may be the case. The extract is probably a complex body and the active principle required may not yet have been isolated.

Possible splenic origin.—Dr. Sidney Martin[3] showed that the spleen is the chief repository of the poison of diphtheritic paralysis and that it is from the proteids of the spleen that the specific poisonous products are mainly formed. In Landry's disease the spleen is most commonly found enlarged and there is a strong resemblance between the symptoms of Landry's disease and diphtheritic paralysis and those of myasthenia gravis. Possibly, therefore, the spleen plays an important rôle in all these affections and is the chief factory whence the poisons are delivered into the circulation. But such theories are at present purely conjectural.

Diagnosis.—The diagnosis of so typical a case as the above presents no difficulty. The clinical details of myasthenia gravis are:—1. Bulbar paralysis, usually slight but at times extreme, affecting the lips, tongue, soft palate, pharynx, and larynx. 2. Weakness of the upper facial muscles, especially of the extrinsic ocular group, causing ptosis, ophthalmoplegia, or inability to close the eyes. The mid-facial muscles—e.g., zygomatic—seem commonly to escape. Of the vital bulbar centres the respiratory is more frequently affected than the cardiac. In a few cases palpitation and syncopal attacks have been observed

[2] Guy's Hospital Reports, 1877.

[3] Goulstonian Lectures, THE LANCET, March 26th (p. 677) and April 2nd (p. 735) and 9th (p. 787), 1892.

apart from, or associated with, dyspnœa. Severe or fatal attacks of dyspnœa may be due to falling back of the tongue, to abductor paralysis of the vocal cords, to paralysis of the intercostals or diaphragm, or to actual obstruction from food passing into the larynx or becoming impacted in the pharynx. 3. Weakness and readily induced fatigue of skeletal and trunk muscles. 4. Presence of so-called myasthenic reaction (the reaction of muscles to faradaism normal at first, but speedily exhausted). 5. Absence of muscular wasting and of fibrillary tremor, with a few doubtful exceptions. 6. Absence of sensory affection, of mental disturbance, and of incompetence of sphincters. 7. The deep tendon reflexes are usually normal, but rarely exaggerated; in a few cases they have been exhausted by repetition. 8. Remissions and exacerbations of the symptoms, both bulbar and general, are characteristic features. The pareses may disappear entirely after rest, but return on exertion. The ocular pareses alone are apt to be persistent. Strümpell supposes this to be due to the ocular muscles being in a constant state of activity. Perhaps the ocular muscles are more permanently disabled because their neurons are few in number compared with those of other muscles, and therefore fail more readily. The same muscles are apt to fail, without apparent affection of others, in syphilis, in early general paralysis of the insane, and in incipient tabes.

The mode of onset is usually gradual, rarely it is sudden, and accompanied by slight headache, pains in the neck and back, giddiness, and photophobia. In some cases the limbs are first affected, but ocular or bulbar symptoms commonly lead the way. The onset may be dated from some preceding illness in a certain number of cases, but not in all. There appear to be no limits as to the age at which the disease may occur. The oldest patient in Campbell and Bramwell's collection was 55 years of age, the youngest was two and a half years. The average age for men was 35 years and for women 24 years. Both sexes are about equally liable to the affection.

Prognosis.—Of 60 cases, several of which, however, are doubtful and many incomplete, 24 have proved fatal; two more fatal cases have been recorded by Hall[4] and Paul.[5] The average duration of the disease in fatal cases was one and a half years. In one it lasted 14 days and in another 15 years. Complete recovery is possible. One patient was in good health four years after all symptoms had disappeared. Goldflam regarded the disease as "a curable form of bulbar paralysis." But the method of cure is still to seek.

Differential diagnosis.—The symptoms of hysteria only superficially resemble those of myasthenia gravis. Weakness, lassitude, and readily induced fatigue are common enough in hysteria and neurasthenia, but the presence of the myasthenic reaction in myasthenia gravis (exhaustibility of reaction to faradaism) affords a distinction. In myasthenia gravis, moreover, sensation is almost invariably unaffected. As regards the ocular symptoms, hysterical ptosis due to spasm of the orbicularis should not be mistaken for myasthenic ptosis due to paresis of the levator palpebræ. True nystagmus does not occur in hysteria, nor do true ophthalmoplegia and inability to close the eyes, all of which symptoms are common in myasthenia gravis. The dysphagia of hysteria is characterised by prodigious though unavailing attempts to swallow. There are incoördination and over-action of the muscles of deglutition, and the effort fails at the critical moment, so that the bolus of food is regurgitated back into the month. As Dr. StClair Thomson expresses it, "The patient complains that 'she cannot get the food out of her mouth,' or that 'it goes down but comes up before it is half swallowed,' or that 'when she goes to swallow, a ball rises in her throat to meet it.'"[6] In hysteria liquids are usually swallowed with ease. The difficulty is with both solids and semi-solids. In myasthenia gravis there is no overaction or incoördination, but obvious weakness of all or most of the muscles concerned in deglutition. The soft palate is particularly apt to suffer, so that fluids slowly trickle through the nose as well as from the weakly closed mouth when an attempt is made to swallow them. Semi-solids are more easily assimilated than either liquids or solids. In both hysteria and myasthenia gravis liquids or solids may go "the wrong way." But in hysteria the attempt to dislodge them is forcible and the cough is explosive; fluids may be violently expelled through the nares, but this is not due to weakness of the soft palate as in the case of myasthenia gravis. In myasthenia gravis one is at once struck by the weakness of the cough and the ineffectiveness of the struggles to obtain relief, when this distressing and dangerous accident occurs. Hysterical dysphagia is purely histrionic.

The speech defects which occur in both hysteria and myasthenia gravis are not alike in character. Hysterical aphonia in which the voice is reduced to a whisper but articulation remains perfect, and hysterical mutism in which the patient looks at one with tear-laden eyes and makes pathetic *moues* or inarticulate sounds cannot easily be confounded with the dysphasia of myasthenia gravis. In the latter disease the voice may become inaudible owing to paresis of the adductor vocal cords and of other respiratory muscles, but weakness of the lips and tongue renders articulation also imperfect or even unintelligible. In hysteria speech may be indistinct from stammering and stuttering due to spasm and incoördination of the tongue and other muscles concerned, but in myasthenia gravis stammering and stuttering are absent. The voice in myasthenia gravis has, moreover, a marked nasal twang which is never met with in hysteria, for in that disease paralysis of the soft palate does not occur.

Hysterical dyspnœa has also to be distinguished from myasthenic. In hysterical dyspnœa respiration is usually quick, shallow, and forcible. There may be incoördination between the action of the intercostals and diaphragm, or sometimes over action or perverted action of the diaphragm and abdominal muscles. This condition may be taken for paralysis of the diaphragm unless the movements are timed, when it will be found that the deep epigastric recession is synchronous with expiration and not with inspiration. Continuous churning and bubbling sounds produced in the stomach, and at short intervals loud trumpeting noises suggestive of a cough, a hiccough, and an eructation combined in one, are associated with hysterical diaphragmatic dyspnœa. Cyanosis is absent and there is no real distress. The dyspnœa ceases during sleep and for the time if the patient's attention can be distracted from her woes.

In myasthenic dyspnœa the distress and the patient's futile efforts to relieve it are only too plain. Sudden attacks of dyspnœa in which the patient falls to the ground and is in imminent danger of asphyxiation are ascribed by Strümpell to falling back of the tongue, for he found that they were relieved by traction on that organ. Another explanation of the relief thus afforded may be that traction on the tongue excited the respiratory centre in the manner described by Lister in cases of chloroform asphyxia. Abductor paralysis of the vocal cords associated with respiratory stridor is also one cause of myasthenic dyspnœa. This is said also to occur in hysteria, but the event must be so rare as to suggest a doubt as to the diagnosis. Myasthenic dyspnœa may depend on paralysis of the intercostals or of the diaphragm and abdominal muscles. The motionless chest in the one case and the epigastric recession occurring with inspiration in the other are in striking contrast with the signs of over-action and perverted action of the intercostals and diaphragm noticed in hysterical dyspnœa. The coarse bubbling râles due to accumulation of mucus in the throat and air passages and the weak, hoarse cough in myasthenia gravis can hardly be mistaken for the gastric borborygmi and churning noises and for the weird admixture of sounds produced per os by hysterical subjects.

Finally, in making a diagnosis between hysteria and myasthenia one is helped by the presence or absence of sensory affections and by the myasthenic reaction. It is true that myasthenic patients may also be hysterical, but as a rule this does not seem to be the case. Yet, unfortunately, at least one case of fatal myasthenia gravis has been diagnosed as hysteria.

From ordinary bulbar paralysis.—Myasthenia gravis is distinguished from ordinary bulbar paralysis by the involvement of the upper as well as the lower half of the face, by the affection of the limbs and trunk, by the myasthenic reaction, and by the variations in the severity of the symptoms. In pseudo-bulbar paralysis the limbs may be affected, but their condition is one of diplegia rather than flaccid paralysis, they are rigid, and show the ordinary signs of descending sclerosis. In bilateral facial paralysis the tongue and also the ocular muscles, with the exception of the orbicularis, are unaffected. The nerves give the

[4] Brain, No. 90, vol. xxiii.
[5] Boston Medical and Surgical Journal, Dec. 20th, 1900.
[6] "Functional Dysphagia," THE LANCET, Dec. 3rd, 1898, p. 1463.

electrical reaction of degeneration which is absent in myasthenia gravis. The facial type of myopathy somewhat resembles the appearance in myasthenia gravis. But myopathy is progressive or stationary and not remittent, the tongue, pharynx, and larynx, and, almost invariably, the ocular muscles with the exception of the orbiculares escape. In superior nuclear palsy (polio-encephalitis) the ocular and bulbar muscles may be paralysed. But here, again, we do not meet with the remissions of symptoms which characterise myasthenia gravis. Also superior nuclear palsy is frequently associated with syphilis, tabes, or general paralysis of the insane, but this association has not been found in myasthenia gravis.

From diphtheritic paralysis.—Myasthenia gravis is perhaps more likely to be mistaken for diphtheritic paralysis than for any other disease. A nasal voice, regurgitation of fluids through the nose when swallowing is attempted, are well-known symptoms of paralysis of the soft palate, and they occur almost without exception in cases of diphtheritic paralysis. In this disease, moreover, paralysis of the extrinsic and intrinsic ocular muscles, of the pharynx and glottis, and of the intercostals and diaphragm are extremely common. General muscular prostration, easily induced fatigue, are observed in diphtheritic paralysis and in myasthenia gravis alike. In both diseases we see sudden onsets of dangerous cardio-pulmonary crises, which may subside, but which often prove fatal. In myasthenia gravis, however, respiratory failure is most common and in diphtheritic paralysis cardiac failure. A most important point of distinction is that the knee-jerks in diphtheritic paralysis are, as a standing rule, absent, although for a brief period they may be exaggerated. In myasthenia gravis they are usually active. In a few cases they have been sluggish and in some they have been exhaustible on repetition. In no case have they been reported entirely absent. The myasthenic reaction is absent in diphtheritic paralysis, but faradaic excitability is diminished, and in some cases the ordinary reactions of degeneration are present. The history of a previous sore-throat is, of course, all important. Yet many cases diagnosed as diphtheritic paralysis have no such history, and possibly some of them may have actually been cases of myasthenia gravis. The following is probably an example.

A boy, aged 11 years, was an in-patient at the Hospital for Epilepsy and Paralysis at Regent's Park Hospital from April 14th till Oct. 8th, 1893, under the care of Dr. A. Hughes Bennett. In the latter's absence I frequently had charge of the case, and regarded it as one of diphtheritic paralysis without evidence of preceding diphtheria. But Dr. Bennett's more cautious diagnosis was "dysphasia and nervous debility." The boy was discharged "much improved." In April 1894, however, he was re-admitted to hospital by Dr. W. Aldren Turner who noted "general feeble action of facial muscles, paresis of both orbiculares and frontales muscles, pupils dilated, no cycloplegia, cannot whistle or pout lips; tongue not protruded as much as it should be; nasal voice, but palate acts normally, weakness of upper and lower limbs general, especially of trapezii and deltoids, knee-jerks elicited with difficulty; feeble action of facial muscles to faradaism." On April 25th attacks of dyspnœa commenced and continued at intervals until the patient died in one of them on May 24th, 1894. Dr. Turner made a post-mortem examination and found the cerebro-spinal system absolutely healthy in appearance. At the time neither he nor I were acquainted with myasthenia gravis and could only regard the symptoms as due to an extremely unusual form of diphtheritic paralysis; unusual in its long duration (more than a year) and in the occurrence of a fatal relapse after a period of remission lasting several months.

The average duration of myasthenia gravis (in fatal cases) is one and a half years, but diphtheritic paralysis rarely lasts beyond a few weeks, during which the symptoms are fairly constant and (with the exception of the dangerous respiratory and cardiac crises which come and go) gradually subside. The difficulty in making the diagnosis in early cases of myasthenia gravis is obvious; but when symptoms of supposed diphtheritic paralysis have lasted unusually long and relapses have occurred after apparent recovery the disease is probably myasthenia gravis and not diphtheritic paralysis. Sensory affections, such as numbness, tingling, and partial anæsthesia, may be of value in the case of adults as evidence of diphtheritic paralysis. These symptoms are usually absent in myasthenia gravis, but in a case recorded by Guastoni and Lombi[7] subjective sensations of heat occurred with formication.

From Landry's paralysis.—Landry's paralysis usually runs a more rapid course than myasthenia gravis. It seldom lasts more than a few days; the symptoms are steadily progressive and not remittent. Electrical reactions are said to be normal, myotatic irritability and superficial reflexes disappear, and sensibility is impaired.

From multiple neuritis.—The history of alcoholic, arsenical, and other toxæmic influences, also the presence of pain, hyperæsthesia or anæsthesia, tenderness in the course of nerves, local œdema, and glossiness or pigmentation of the skin, rapid wasting of the muscles, loss of tendon reflexes, absence of myasthenic reaction, distinguish multiple neuritis from myasthenia gravis.

From post-influenzal neuroses.—Some of the cases of myasthenia gravis in which the onset has been sudden and associated with fever, headache, photophobia, and general pains suggest an influenzal origin. Moreover, in the early nineties, when influenza was a far more virulent affection than at the present day, sequelæ in the shape of various forms of ophthalmoplegia, of paralysis of the soft palate, pharynx, and larynx, of various cranial nerves, and cardio-pulmonary seizures were not infrequent. The complete muscular prostration and general neurasthenia following influenza also resemble the conditions in myasthenia gravis. But apart from psychical and hysterical affections the post-influenzal paralyses in general are attributable to multiple neuritis or to definite myelitis affecting various segments of the cord, whilst in the case of myasthenia gravis the symptoms cannot be referred to such lesions.

Treatment.—The symptoms of the disease are always rendered worse by bodily exercise and mental excitement. Hence, complete rest for mind and body should be the aim of treatment. The patients are from the very first in imminent danger of death, and their relatives should be warned of this, otherwise the deceptive lulls in the symptoms may encourage fatal indiscretions. Medical attendants should remember that frequent physical examinations may have disastrous results. Meals should be small, easily assimilated, and given at short intervals. The use of the stomach tube is dangerous, and should deglutition become impossible rectal feeding is the only course to pursue. Stimulant methods of treatment by cold douching and faradaism are absolutely contra-indicated. Massage and galvanism have proved useless. None of the drugs hitherto employed appear really to influence the course of the disease. Strychnia has been used without benefit by Strümpell and Dr. Buzzard—my own patient improved under strychnia at first, but subsequently relapsed whilst still taking it. Thyroid and suprarenal extract have proved also ineffectual. Tonics, such as arsenic and iron, have no specific action. Perhaps a more extended trial of suprarenal extract might be worth making. Its probably complex nature and variation in its constituents according to the condition of the glands at the time the extract is made may account for its failure hitherto as a remedy. Other organic extracts, such as cerebrin, myelin, didymin, and ovarian substance may also conceivably be of service in a toxæmia which produces no visible changes in any part of the nervous system. Failing these medicaments, one can only hope that the toxin of myasthenia gravis may be traced to its source, isolated, and its antidote found in our chemical and physiological laboratories. For morbid anatomy has thrown no light on the nature of the disease.

Upper Berkeley-street, W.

PTOMAINE POISONING OR PERFORATION?

BY E. KEMPSON BROWN, M.R.C.S. ENG., L.R.C.P. LOND.

ON Nov. 19th, 1900, I was called to see a woman who was said to have become suddenly unconscious. She was an albino, 27 years of age, of nervous temperament, and generally enjoyed good health. I found her lying on her back with her legs extended; her face was pale, her skin was hot to the touch, and her pulse was almost imperceptible. Her eyes were closed. When spoken to she made no reply, but opened her eyes, which were then seen to be expressionless

[7] Il Policlinico, Sept. 1st, 1900.

and vacant; her pupils were dilated and her eyeballs moved irregularly. Her respirations were loud and 20 per minute; her temperature in the axilla was 103° F. There were twitchings of the muscles of her neck and face, her abdomen was slightly tympanitic, and signs of pain were elicited on pressure. Physical examination of the lungs, heart, and liver showed nothing abnormal. After the lapse of an hour the patient was more conscious; her pulse was 140 at the wrist, of very low tension and irregular, and her temperature in the axilla was 105°. Subsequently she had rigors, her temperature fell progressively and was 99° five hours before death. Her extremities became cold, the surface of her body became clammy, and she had hallucinations with general nervous prostration. Diarrhœa and vomiting were frequent, the stools being offensive and dark-coloured. In three days she passed about a pint of dark-coloured urine containing phosphates and mucus but no albumin. A papular erythematous rash developed on the backs of her hands and wrists and a few spots on her abdomen and knees on Nov. 21st. Death occurred early on the morning of Nov. 22nd, about 86 hours from the onset of the first symptoms.

I ascertained the following facts from her friends. She had been poorly the previous week from the effects of menstruation and cold. On Nov. 17th she felt well and ate two beef sausages. Three other persons had also partaken of sausages the same night. Two of them suffered from diarrhœa and vomiting. The third ate very little and was not affected; she gave the rest of her sausage to her dog, which was violently sick 12 hours afterwards. The deceased was seized with severe pain in her abdomen and vomiting 12 hours after eating the two sausages; diarrhœa set in about 20 hours afterwards. At the post-mortem examination the abdominal cavity was found to contain about a pint of turbid fluid. There was exudation of lymph and there were recent adhesions between the omentum and intestines. The parietal peritoneum was smooth and there were no signs of inflammation. The peritoneum over the small intestines appeared to be intensely inflamed, especially in the region of the ileum; the upper part of the small intestine was markedly distended. The spleen and the posterior surface of the stomach were bathed in curdy lymph. The mucous membrane of the stomach was acutely inflamed over the cardiac portion of the greater and lesser curvature with numerous ecchymoses, and the external surface in these regions was likewise inflamed. In the upper part of the duodenum the mucous membrane showed petechiæ in the submucous tissue; the duodenum was dilated. The inner surface of the rest of the intestine was pale with a few pin-point nodules at the lower six inches of the ileum. The lumen of the appendix was occluded; there were no adhesions externally and no signs of recent inflammation in this region. In connexion with the left ovary there was a multilocular tumour of the size of a hen's egg containing clear fluid; there were no signs of inflammation around it. The right ovary showed commencing cystic formation. The Fallopian tubes and uterus were healthy; the bladder was normal; the kidneys, liver, spleen, and lungs were congested; the heart was normal; the brain was anæmic.

Remarks.—The points of interest about this case, I think, are the following: (1) the sudden occurrence of the semi-unconscious state; (2) the high temperature; (3) the absence of marked muscular weakness; and (4) the very intense inflammation in the peritoneum covering the intestine without any apparent inflammation inside from which the toxic irritant presumably extended. The peritonitis might conceivably have commenced over the cardiac portion of the stomach and so have progressively extended and become more general.

Andover, Hants.

A CASE OF CEREBELLAR HÆMORRHAGE PRESENTING WELL-MARKED EARLY CERVICAL OPISTHOTONOS AND KERNIG'S SIGN.

BY WILLIAM THYNE, M.A., M.D. EDIN.

A MAN, aged 20 years, with an epileptic history, was in his usual health on Christmas Day, 1900. After partaking of several hearty meals he was seized with vomiting, which continued through the night. About six hours after the onset it was noticed that the head was retracted (see Fig. 1) and the patient complained of severe frontal headache. There were no loss of consciousness, no motor paralysis, and no convulsions or twitchings, and the organic reflexes were unimpaired. The tendon reflexes were increased. Kernig's

FIG. 1.

Showing retraction of head.

FIG. 2.

Showing Kernig's sign.

sign was well-marked, as shown in Fig. 2. There was no ocular deviation. The condition of the optic discs could not be made out owing to the presence of traumatic cataract in the right eye and old keratitis in the left. The temperature was normal or subnormal except on the evening of Dec. 30th, when it was 102·6° F. The pulse varied from 60 to 160, but was regular in force and rhythm. There was no cardiac disease. On the 30th lumbar puncture was performed but gave a negative result. The patient remained in this condition, except for increasing weakness, till Jan. 4th, 1901, when he lost power in both legs, the right being the first affected. Consciousness remained unimpaired till death took place on Jan. 5th, 1901.

On the same day a partial post-mortem examination was made by Dr. R. G. Riddell. The dura mater was thick but healthy. There was a serous effusion in the subarachnoid space which was very marked posteriorly. Over the right occipital lobe there was a thin layer of coagulated blood extending down to the cerebellum. The lateral ventricles contained about four drachms of clear serous fluid. The fourth ventricle was filled with blood-clot. There was a small hæmorrhage in the left lateral lobe of the cerebellum. There was no hæmorrhage over the base and no evidence of meningitis. The serous fluid from the subarachnoid space contained no organisms.

The sequence of events probably was as follows. A hæmorrhage occurring in the left lateral lobe of the cerebellum found its way into the fourth ventricle and thence through the foramen of Magendie to the subarachnoid space, the position of the hæmorrhage over the occipital lobe being probably determined by gravity. The case is interesting from the fact that well-marked cervical opisthotonos and Kernig's sign were due to cerebellar hæmorrhage, meningitis, with which they are usually associated, being absent.

Mr. S. G. Shattock very kindly examined sections of the cerebral lesion and found the arterioles free from any chronic disease in sections passing right through the seat of the hæmorrhage.

High Barnet.

A CASE OF

PELVIC SARCOMA WITH CHYLOUS ASCITES; ABDOMINAL SECTION AND DRAINAGE; PATIENT WELL FOUR AND A HALF YEARS AFTER OPERATION.[1]

BY ARNOLD W. W. LEA, M.D., B.S. LOND., F.R.C.S. ENG.,

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DURING recent years many cases have been reported in which abdominal tumours, apparently malignant, have ceased to grow and have sometimes entirely disappeared as a result of simple abdominal exploration. Our knowledge of the factors concerned in bringing about this result is very imperfect. In some instances inflammatory masses have doubtless been taken for new growths, but this cannot be the general explanation and it is well that all such cases should be recorded. The notes of this case are as follows.

The patient, a woman, aged 58 years, was first seen in September, 1896. She complained of swelling of the abdomen together with "bearing-down" pain. She had never been pregnant and she had always enjoyed good health. Ten years previously (in 1886) she consulted a well-known gynæcologist on account of profuse menorrhagia which was considered to be due to a fibroid tumour of the uterus. Three years later she herself could plainly feel a lump low down in the right side of the abdomen, but the menopause had come on and the swelling caused her no trouble. Early in 1896 she observed a rapid increase in the size of the abdomen and she also had pains in the pelvis associated with irritability of the bladder and pressure symptoms. She had also recently lost flesh considerably, though she was still well nourished and looked fairly healthy. Examination of the abdomen revealed marked distension below the umbilicus, especially prominent on the right side. A thrill was readily obtained and the distended part of the abdomen was dull, while the flanks were resonant. The physical signs were those of a large thin-walled ovarian cyst. By careful palpation firm masses could be recognised apparently within the cyst. A large elastic tumour was felt in the right inguinal region and another rounded mass in the right hypochondrium. On examination per vaginam the uterus was found to lie very low, the cervix reaching the vulval orifice. Douglas's pouch was bulged downwards. The uterus was small and pushed to the left side; the sound passed two and a quarter inches. The right side of the pelvis was filled up by a firm irregularly shaped mass occupying the broad ligament and continuous with the mass in the inguinal region. The body of the uterus could not be clearly defined as separate from the tumour. The left side of the pelvis appeared to be free.

Operation was performed on Sept. 25th, 1896, when the abdomen was opened in the usual way and the parietal peritoneum, which was somewhat thickened, was incised. This was followed immediately by the evacuation of a large quantity of chylous fluid, at first sight resembling pus. Seven pints of this fluid were collected. It had evidently been encysted between peritoneal adhesions. On introducing the hand a firm solid mass was recognised filling up the right side of the pelvis and iliac fossa. This was covered by peritoneum and had developed between the layers of the right broad ligament. The uterus was pushed away to the left and was quite small. The appendages were normal. The rectum was not pressed upon and the left side of the pelvis was free from growth. The mass on the right side extended upwards, with numerous irregularities and several large projecting masses, as high as the right hypochondrium. The tumours were deep red in colour and numerous large vessels ran over their surface. A pedunculated mass, of the size of an orange, projected towards the left side of the abdomen above the level of the pelvic brim. The cæcum and colon were displaced and lay external to the tumour and posteriorly. The small intestines were pushed upwards by the pressure of the ascitic fluid, and were matted together by numerous adhesions. The mesentery was apparently considerably shortened. The liver was normal in size and to the touch. The tumour was evidently beyond removal. An incision into the peritoneal capsule showed this to be firmly adherent to the surface and it was impossible to strip it off to any extent. The abdomen was flushed out with saline solution and an indiarubber tube was inserted.

The patient progressed very favourably. The discharge through the tube was very scanty. There was no rise of temperature. The tube was removed on the sixth day. The wound healed well. There was no accumulation of fluid, though the masses of the tumour were now plainly felt. The patient left the Nursing Home in three weeks feeling very well. Microscopic examination of the fluid revealed a granular basis of emulsified fat with a few leucocytes and red blood corpuscles. Since this time, nearly four and a half years ago, the patient has remained in good health and I have seen her at intervals. At the present time she is 63 years of age and feels well. The abdomen is lax and resonant all over. On palpation, however, small masses can be plainly felt in the right iliac region and also in the right hypochondrium. The uterus is small and atrophied. The mass in the right broad ligament is still present but is much smaller.

Such are the facts of this case and I have thought it of sufficient interest to record it in some detail. The primary tumour appears to have been a fibro-myoma of the right broad ligament. The history of a swelling in that region for ten years associated with menorrhagia, but without any evidence of implication of the uterus, shows that the condition cannot have been malignant from the first.

Fibro-myoma developing in the connective tissue of the broad ligament is rare, but many cases have been recorded. In 1885 Mr. Bland-Sutton collected details of 11 cases, some of which had attained a large size. Mr. Alban Doran recently removed one weighing 44 lb. The growths have always occurred in women over 35 years of age and are often bilateral. They often also grow with extreme rapidity. In some cases

[1] A paper read before a meeting of the Clinical Society of Manchester on Jan. 15th, 1901.

at least this has been due to infection from the bowel, as in two cases recorded by Mr. Bland-Sutton. In this instance the physical signs and appearances were those of a malignant tumour. Many examples of the origin of sarcomatous growths from uterine fibroids have been recorded (W. Williams, Doran, Langenhans, Leopold, &c.), although this is undoubtedly rare. Microscopically, the malignant growth is usually a spindle-celled sarcoma or shows embryonic spindle cells of connective tissue or myomatous origin. Cases of primary sarcoma occurring in the broad ligament are also recorded. I am not aware that as yet any case of broad ligament myoma becoming sarcomatous has been described, but judging from analogy with uterine tumours there is a possibility of this occurring occasionally.

The development of chylous ascites in this case is also an unusual feature. Chylous ascites is in itself very rare. In a recent paper by Dr. Halliday Croom[2] he was only able to collect 63 recorded cases, but no doubt many more have occurred. Under this heading some cases have been placed in which the fluid was not chyle but milky-looking fluid in the peritoneal cavity due to the presence of cellular elements of a malignant growth. In true chylous ascites there is obstruction to the lymphatic circulation. This is rarely due to obstruction of the thoracic duct; more commonly it is the result of contraction of the smaller lacteals close to the mesenteric attachment of the bowel. This may be brought about by the development of small nodules of malignant growth in the mesentery. In other cases it may be the result of cicatricial contraction of the mesentery, as in some forms of chronic adhesive peritonitis due to tubercle or secondary to chronic irritation of the peritoneum. Very rarely in England filaria is found as a cause of chylous ascites. It is of interest to note that in two cases at least[3] tumours of the broad ligament have been met with associated with chylous ascites. In one case recorded by Dr. J. Fenwick double papillomatous cysts of the broad ligament were found accompanied by numerous secondary growths in the abdomen and marked shrinking of the mesentery with adhesions between the parietal and visceral layers of the peritoneum. In a case recorded by Dr. F. J. Smith,[4] although tumours were present in the broad ligaments the physical signs were rather those of very chronic adhesive peritonitis, due primarily to irritation of a carcinoma in the region of the gall-bladder.

The influence of the operation in this case is a question of great interest. No satisfactory explanation has yet been given of the fact that atrophic changes undoubtedly occur in certain tumour formations as a result of abdominal section. Mr. F. Treves in recording some cases of this nature considered that the explanation may be found in questions of intra-abdominal pressure, a subject on which little is known at present. It has been observed that in most of these cases the tumours have been of connective tissue origin, to be classed therefore as sarcomata. These tumours, composed of embryonic connective tissue, have apparently in many instances a somewhat low vitality, and the slight inflammatory changes set up as the result of operation are sufficient to check active growth or even to cause their absorption. These tumours are comparable to the infective granulomata such as tubercle, which, especially in the abdomen, is well known to atrophy and even to disappear after abdominal section with or without drainage. In this present case, since four and a half years have elapsed since the operation without any increase in growth, it is obvious that the operation in some way inhibited the further development. The chylous ascites was probably attributable to a chronic adhesive peritonitis resulting from the irritation of the tumour and producing by shrinkage and adhesions obstruction of the lacteals. This process was also inhibited and now, at any rate, there is no lacteal obstruction; this is probably due to the development of fresh lymphatic channels. The growths in the abdomen have not disappeared. They are still present though causing no symptoms, and it is, of course, possible that at some future time renewed activity may commence in them.

Manchester.

[2] Transactions of the Obstetrical Society of Edinburgh, March, 1900.
[3] Fenwick: Brit. Med. Jour., vol. ii., 1891, p. 592.
[4] Transactions of the Pathological Society of London, 1891.

UNIVERSITY COLLEGE, CARDIFF.—By his will the late Professor Alfred Hughes has bequeathed several interesting specimens, models, and diagrams to University College, Cardiff.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON THE RESULTS OBTAINED BY THE ANTI-TYPHOID INOCULATIONS IN THE 15TH HUSSARS, MEERUT, INDIA.

BY A. E. WRIGHT, M.D. DUB.,
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THROUGH the kindness of Lieutenant-General Sir George Luck, commanding the Bengal army, I am permitted to publish the following officially compiled statistical statement dealing with the effects of anti-typhoid inoculations in the case of the 15th Hussars:—

From Oct. 22nd, 1899, to Oct. 22nd, 1900.

—	Strength.	Number inoculated in England.	Admissions to hospital for enteric fever.	Deaths from enteric fever.	Number not inoculated.	Admissions to hospital for enteric fever.	Deaths from enteric fever.
Officers	22	19	0	0	3	0	0
N.C.O. and men	481	317	2	1	164	11	6
Women	36	24	0	0	12	0	0
	539	360	2	1	179	11	6

It would thus appear that the incidence of enteric fever in the inoculated was represented by 0·55 per cent. and the mortality by 0·27 per cent., while the incidence in the uninoculated was 6·14 per cent. and the death-rate 3·35 per cent.

Netley.

A NOTE ON AUSTRALIAN BITTER BARK (ALSTONIA CONSTRICTA) IN INFLUENZA.

BY J. GORDON SHARP, M.D. EDIN.

ONE of the drugs of the new Addendum to the Pharmacopœia is *Alstonia constricta* F. v. M., known as bitter bark, fever bark, or Australian bitter bark. It belongs to the same order as strophanthus—namely, *apocynaceæ* or the dog-bane order, and is a native of Queensland and New South Wales. It contains, perhaps, four alkaloids, one of which alone possesses any importance from the clinician's point of view, and it is known as alstonine. My specimen of alstonine is a dark brown amorphous body costing 3*s.* 9*d.* a gramme (15½ grains). For the present, then, alstonine is only known in the laboratory and it must become much cheaper before it comes within the domain of practical therapeutics. Both bark and alkaloid are intensely bitter and the former has been employed by foreign brewers to add bitterness to their ales. In the Australian colonies a decoction is said to be employed and is called by the name "bitters." Preparations of the bark have been employed as a general tonic and in certain stages of typhoid fever. The drug appears to act on the skin and kidneys as well as on the nervous system. The peculiar property of this bark appears to be that it resembles both quinine and strychnine. Physiologically it does not act on frogs like strychnine, but, like quinine, the alkaloid alstonine paralyses and finally kills amœba, paramœcium, and vorticella, but it is weaker than quinine.

The drug has been brought to notice by Dr. Joseph Bancroft of Brisbane, by Dr. Bixby of Detroit, U.S.A., and more recently in the *Pharmaceutical Journal* of July 8th, 1899, by Mr. J. H. Maiden, Government botanist at Sydney, New South Wales. *Alstonia constricta* must be distinguished from *Alstonia scholaris* R. Br., known as dita bark, or devil

bark, and belonging to the same order, and a native of India, of the Malay Archipelago, and of tropical Australia.

For over 18 months I have employed a tincture of the bark as a general tonic and more particularly in influenza. I start with it as soon as the feverish stage is over and give from five to 10 minims in chloroform water four times a day, preferably some little time before meals. Acting as it appears to do on the skin and kidneys it can be administered with safety even before convalescence has set in, seeing that it helps in the elimination of the poison. I can confidently recommend its use as a valuable agent in the treatment of influenza. Like every other drug it does not act in every case, but generally speaking one finds it useful. The Addendum dose of the tincture is from a half drachm to one fluid drachm. This is too much for a start, and I prefer to start with 10 minims or even in many cases with five minims, and, as I have said, chloroform water is the best vehicle.

Leeds.

DIPHTHERIA ANTITOXIN USED SUCCESSFULLY BY THE MOUTH.

BY W. CAMPBELL M'DONNELL, M.R.C.S. ENG., L.R.C.P. LOND.

IT being thought that the antitoxin of diphtheria must for successful exhibition be hypodermically injected the following may be useful.

A girl, aged 14 years, having both tonsils covered with a soft white pellicle and with no symptoms but a sore-throat, very slight enlargement of the related lymph glands, and a temperature of 38·2° C., at 11 A.M. on Nov. 12th, 1900, was given 1500 units of antitoxin by the mouth on the second day of the illness. The antitoxin had been issued by Burroughs and Wellcome in the dry state and was 20 months old. One patch yielded the diphtheria bacillus, as was certified by the medical officer of health. Within 20 hours of giving the antitoxin the right tonsil was quite clear. No application was made nor was any gargle used to the throat. On the third day there was no pellicle to be seen and at 11.30 A.M. the temperature was 35·8° C. On the fourth morning the temperature was 37° C. On the tonsil which was at first the most affected was seen a slight recurrence of pellicle. For this another 1500 units of the dissolved dry antitoxin were given by the mouth. She recovered uneventfully and as quickly as possible.

In an earlier case, where the struggling on attempting to hypodermically inject the antitoxin of diphtheria made that method impracticable, the antitoxin was rectally injected. The benefit was equal to that in the case described above. In this case, however, diphtheria was not bacteriologically proved, but clinically it was certain.

Stoke Newington, N.

A TUMOUR SIMULATING EPITHELIOMA WHICH APPEARED TO FOLLOW THE STING OF AN INSECT.

BY EDWARD J. WOOLLEY, M.B., B.C. CANTAB.

THE following case is of interest chiefly on account of the appearance of an uncommon causation, the tumour itself presenting no characteristics to differentiate it from epitheliomata from commoner causes and in more usual positions.

The patient was a labourer, 54 years of age. He was thin almost to emaciation, but said that he had always been so and that he had noticed no loss of flesh in the last few months. In July, 1900, he was stung, or bitten, on the external surface of the forearm by an insect which he described as "a green fly." A swelling of the size of a common nut appeared at the site of the sting and the patient rubbed it and attached no importance to it, thinking that it would go down. This, however, was not the case. Six weeks after the injury there was considerable itching in and about the swelling. The patient poulticed it and bathed it frequently with hot water. He noticed at this time that the swelling was getting larger. He continued his poultices and bathings until Dec. 14th, when he came to me. The tumour was then circular in shape and of about one inch in diameter, being raised above the surface of the surrounding healthy skin not more than one-sixteenth of an inch. The centre of the growth was hollowed out slightly and had the appearance of a dry ulcer. There was some hardness, but not the hardness to be expected in a malignant growth; and there was no pain. The glands in the axilla and the supra-condylar gland were not enlarged. The skin in which the growth was situated was freely moveable on the subcutaneous tissues. Although the history and the appearance of the growth were not strictly those of epithelioma, they seemed sufficiently so to call for its excision and on Dec. 20th I removed it, under ether, by an elliptical incision. I found the growth to be confined exclusively to the skin, and the tissues under it to be quite healthy and not at all adherent to the tumour. A microscopical examination showed the tumour to be a squamous-celled epithelioma with well-developed cell-nests—a typical epithelioma of the skin. I should add that no members of the patient's family on the male or female side have suffered from cancer.

Kingston-on-Thames.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

LONDON HOSPITAL.

A CASE OF HYDATID CYST OF THE LIVER RUPTURING INTO THE TRANSVERSE COLON.

(Under the care of Dr. F. J. SMITH.)

EVACUATION of the contents of a hydatid cyst of the liver into the bowel is not a common occurrence; more frequently the cyst makes an opening into the general peritoneal cavity, or through the diaphragm into the pleural cavity, or into the bronchial tubes of an adherent lung. When, however, the intestinal route is chosen by the hydatid, suppuration generally occurs in the cyst, and recovery is often complete and permanent. For the notes of the case we are indebted to Dr. H. N. Clarke.

A man, aged 32 years, was on April 2nd, 1900, admitted into the London Hospital with jaundice. He stated that he had been quite well until November, 1899, when he had an attack of "biliousness" and "constipation." Ten days later he had severe pain across the lower part of the chest; the pain was sufficient "to double him up" but did not make him vomit; the next day he became jaundiced. These signs all cleared up in about a week. Since then he had had five attacks, all the same in character—viz., pain first and then jaundice. He described his stools as being "like white putty" during the attacks. His family history was good; there was no history of syphilis or gonorrhœa. He had always been a temperate man.

The patient was admitted to hospital during his sixth attack of jaundice; he was deeply jaundiced and was much wasted, but he did not know how much weight he had lost. On examination the heart was found to be normal; there was a good deal of general bronchitis, and there was some fulness of the upper part of the abdomen. The liver was enlarged and the edge could be felt about two and a half inches below the costal margin; the organ was tender and a rounded smooth lump three inches across could be felt in the epigastrium, rather more to the left than to the right of the middle line; there was no œdema of the abdominal wall. On palpation the lump gave the sensation of deep fluctuation. The stools were white and clay-like. The urine contained a trace of albumin; the specific gravity was 1040 and bile was present.

Three days after admission—viz., April 5th—the patient had a rigor; the next day he was seen by Mr. Mansell Moullin who advised an exploratory laparotomy. It was decided that this should be done as soon as the bronchitis had cleared up sufficiently to allow the administration of a general anæsthetic. On the morning of April 7th the lump in the epigastrium was observed to be much smaller, and

later in the day some large pieces of white translucent membrane were passed in one of the stools, which had been carefully sifted since the patient's admission. No hooklets or scolices were found. The temperature ranged from 102° to 98° F. From this point the patient made an uninterrupted recovery; the swelling in the epigastrium entirely disappeared, though the edge of the liver could still be felt when the patient left the hospital. The jaundice gradually faded away, the appetite improved, and the patient rapidly put on weight again, being discharged as cured on May 8th.

Remarks by Dr. CLARKE.—Though no hooklets or scolices were found, it nevertheless seems most probable that this was a case of hydatid of the liver which suppurated. The transverse colon probably then became fixed to the under surface of the liver by adhesions and the pus was thus able to make its way out of the abscess cavity into the gut.

Remarks by Dr. SMITH.—This case is an excellent illustration of the occasional expulsion of a hydatid by nature's own means. We had fully made up our minds that surgery afforded the patient the best chance and were only waiting a favourable opportunity for operation when the rupture took place. There could be no room for doubt as to the nature of the membrane passed per rectum, as it was totally unlike any other possible membrane, though it is somewhat unfortunate that no hooklets were found. I can personally only call to mind one other case in which a hydatid has been naturally evacuated with such a happy result; that was in a boy who without any symptoms worth mentioning or physical signs either coughed up from the lung the whole of a hydatid cyst in large fragments. I showed the patient and the membrane at a meeting of the local branch of the British Medical Association in 1899. I cannot add anything of value to Dr. Clarke's account of the present case.

QUEEN'S HOSPITAL, BIRMINGHAM.

A CASE OF RUPTURE OF THE THORACIC AORTA.

(Under the care of Dr. O. J. KAUFFMANN.)

THE very interesting case recorded below is remarkable in that rupture of the aorta apparently occurred without any local disease and without any special strain. It must be remembered, however, that rupture of the aorta is often a slow process. A small fissure may appear in the internal layer of the wall as the result of some sudden increase of pressure, but the tearing of the other coats may proceed gradually and no violent symptoms may be produced until the outer coat gives way. As to the wall of the aorta in this case a microscopic examination would be needed to render it certain that no morbid change was present. Rupture of the aorta may occur in young adults, as in a case recorded by Dr. J. Lumsden,[1] where a young woman, 23 years of age, died from rupture of the aorta after lifting down a box from a shelf, and apparently, from the description, there was only a slight change in the endothelium and in the subendothelial tissue. Occasionally the aorta has been perforated by an exostosis from a rib, as in a case recorded by Mr. E. A. Lightburne,[2] where a boy, 12 years old, died from this cause with extensive hæmorrhage into the left pleural cavity. For the notes of the case we are indebted to Dr. A. Stanley Barnes, late house physician.

A groom, aged 19 years, was admitted into the Queen's Hospital, Birmingham, under the care of Dr. Kauffmann, on Oct. 11th, 1900. No history could then be obtained, as he was almost unconscious and quite unable to answer questions. The history obtained next day was as follows. He always was a "delicate" lad, but had never suffered from any illness sufficiently severe to keep him in bed. For a month before admission he had complained of an aching and sometimes shooting pain in the lower part of the chest behind (about the level of the eighth dorsal vertebra); this pain was worse on exertion, but was not accompanied by cough nor was it increased on deep inspiration. He consulted a medical man about it on Sept. 20th and was given a bottle of medicine, no physical examination being made. The pain was better on the next day and did not trouble him again for a fortnight, when on its recurrence the treatment was repeated, but this time without benefit. Despite his vague pain he kept at his work until Oct. 11th. On this day, at about 2.30 P.M., soon after his dinner, he felt very bad, the pain having suddenly become much worse. He ceased work at once and started for home, catching an omnibus a few yards away; he did not have to run for the omnibus nor had he undergone any other strain that day. Five minutes later the guard noticed that he looked very bad and called a medical man who found him in a collapsed and pulseless condition. He administered three minims of liquor strychniæ hypodermically and sent him at once to the hospital in charge of the police. Neither from the patient nor his parents could any history of an injury to the chest, either remote or recent, be obtained. He had had no cough and had never complained of indigestion. There was nothing in the family history to suggest either syphilis or tubercle; the lad himself denied exposure to syphilitic infection, and the father (with whom he lived) strongly supported his statement.

On admission the patient was a lightly-built lad with very little subcutaneous fat and looking somewhat wasted. He was very pale, the lips having a faint bluish tinge and the conjunctivæ being anæmic. He was partly conscious but could not answer questions and tossed about moaning restlessly on the couch. The pulse was rapid and very small. The abdomen was rigid but not distended nor was there any dulness in the flanks; there was considerable tenderness in the left hypochondriac region; no viscera could be palpated. The chest was slightly deformed, the sternum being too prominent. It was at once noticed that the left side of the chest hardly moved with respiration and that the palpable apex-beat of the heart was in the third interspace in the right vertical nipple line. The left axilla was dull up to the level of the fifth rib, and above this a low-pitched tympanitic percussion note was obtained, reaching as far to the right as the middle line and upwards almost to the clavicle. Behind, the lower part of the left chest was dull as high as the seventh rib, and above this the dulness shaded off gradually to a normal note at the apex. Over the very dull area no breath sounds could be heard and vocal fremitus was absent, in the hyper-resonant area faint breathing with prolonged expiration was heard, and in the partly dull area diminished rather harsh vesicular breathing was heard. Over the right lung no alteration of percussion note was observed and breath sounds though harsh were vesicular. The "anvil-sound" was well heard over the third and fourth left spaces in front. There were no heart murmurs. The pulse was 120, the respirations were 28, and the temperature was 98·2°F.

Morphia was given subcutaneously and the patient was put to bed. He slowly improved and by the next morning was able to give his part of the history recorded above, the rest of it being supplied by his mother and father. On Oct. 12th (the day after admission) he was still very weak and pale, but quite conscious and less restless. The abdomen was rigid and slightly retracted with inspiration, the recti abdominis hardening with expiration; a tympanitic note was obtained all over the abdomen. There was a little tenderness in the left hypochondrium but none elsewhere. The physical signs in the chest remained the same except that the hyper-resonant area extended to the right edge of the sternum and was now of a higher pitch than before.

As the patient was evidently suffering greatly from the increased pressure in the left side of the chest it was decided to attempt to remove some of the air and blood. A trocar and cannula were thrust through the fifth space in the left anterior axillary line—i.e., at about the upper limit of the dulness. The trocar was withdrawn and a water manometer about 10 inches high was attached to the cannula. On releasing the clamp between the cannula and the manometer the water was at once forced up to the top of the manometer tube and then overflowed. A mercury manometer was therefore substituted and indicated at once a positive pressure of 35 millimetres of mercury with expiration. About two ounces of air and a quantity estimated at from 10 to 12 drachms of dark fluid blood were then withdrawn and the intra-thoracic pressure fell considerably; as, however, the tubes became repeatedly blocked by clots of blood the cannula was removed and the wound was closed. For the same reason the final reading of the manometer, just before withdrawing the cannula, was untrustworthy. An examination of the chest immediately after the tapping showed that the hyper-resonant note was now much less high pitched and did not quite reach to the right edge of the sternum.

On Oct. 14th there was slight fever (the temperature being 99·6°) but the general condition was much improved. For the first time a heart murmur appeared, a soft whiff at the

[1] Brit. Med. Jour., Jan. 7th, 1899, p. 21.
[2] THE LANCET, Jan. 11th, 1896, p. 99.

first left cartilage close to the sternum, accompanying the first sound; and a similar one immediately succeeding the first sound in the third right space at the point of maximum heart pulsation. The rigidity and tenderness of the abdomen had almost disappeared; there was more dulness in the left side of the chest, the whole axilla being dull, but the expansion was less diminished. On the 16th the patient was much better and the tympanitic note did not transgress the middle line. The upper part of the left chest as far as the third rib gave a loud tympanitic note, thence to the fifth rib a shallow tubular note, and below that was absolute dulness. The heart remained as before, but slight epigastric pulsation—probably representing the true apex beat—was now felt. At 9.20 A.M. on the 18th, whilst apparently doing well, he cried out suddenly with pain in the left side of his chest and became blanched and covered with a cold sweat. Dr. Stanley Barnes saw him within three minutes and at once gave morphia, but he rapidly sank, dying within 20 minutes of the onset of the acute symptoms. During this time the dulness in the left side rose much higher and the discolouration around the puncture wound was noticed by the nurse to be markedly increased immediately after death.

During the whole week that the patient was in hospital he neither vomited nor expectorated anything and only occasionally did he cough—a short, harsh, dry cough. The urine once only showed a trace of albumin—i.e., the day after admission; its specific gravity was normal and no casts or blood cells were found.

Necropsy.—At the post-mortem examination, which was made on Oct. 19th, the body was found to be thin, wasted, and very pale. There was considerable subcutaneous hæmorrhage around the puncture of the 12th, extending dorsalwards from it. On opening the chest the heart was seen to lie completely on the right side, the apex being one and a quarter inches to the right and the extreme border three and a half inches away from the middle line. The left lung came to the front in the subclavicular region; below this the front was occupied by fresh gelatinous blood-clot; between four and five pints of this were removed and then the source of it was discovered in the angle between the left lung and aorta, about the level of the eighth rib. There was a large false aneurysm consisting of fibrinous blood-clot, with red gelatinous clot internal to it, lying along the inner surface of the left lung and extending upwards nearly to the apex. It arose from an oblique tear across the descending part of the aorta; the rent had evidently existed several days, since it showed signs of inflammation and repair, slight but distinct. The lower part of the false aneurysm had broken through some lung tissue; elsewhere the blood was limited by condensed fibrinous clot and some thickened pleura which limited it in every direction except below, where the hæmo-pneumothorax had occurred. There was no sign of tubercle in the lungs or vertebræ, nor were any of the latter eroded. The aorta showed no sign of endarteritis either here or elsewhere. It appeared rather wide, its circumference measuring eight centimetres near the transverse part of the arch and six centimetres near the diaphragm; its walls were healthy but rather thinner than usual. The tear extended obliquely round nearly three-quarters of the circumference of the vessel. The heart was healthy. In the left kidney were some recent yellow infarcts. The tension in the left pleural cavity was such that the left side of the diaphragm was convex downwards towards the abdomen.

Remarks by Dr. BARNES.—I have thought this case worth reporting in full on account of its extreme rarity. I have never seen or heard of another case of rupture of the healthy aorta apart from injury or sudden strain. In this case the lad and his parents were certain that no kick or other kind of injury had been received. No disease could be found in the aorta post mortem, and syphilis in the case was put out of court as far as is ever possible by a history. A second point of interest is that he should have survived for a week after an extensive rupture of such a large artery; presumably a clot had formed at the site of the laceration and for the time being prevented further hæmorrhage, but after the arterial system had regained its tone a slight movement or temporary increase in the blood-pressure would be enough to wash away the feeble barrier and allow fresh hæmorrhage to occur.

Evidently one reason why the plug in the lacerated aorta remained in its place so long was that the difference between the pressures in the aorta on the one hand and in the pleura on the other was much diminished by the great increase in intra-thoracic pressure occasioned by the sudden large hæmorrhage, as well as by the great lowering of arterial blood-pressure which also accompanies a large hæmorrhage. The pressure recorded in the chest 20 hours after the hæmorrhage occurred was 35 millimetres of mercury during expiration (about 19 inches of water), which is, I believe, almost the greatest intra-pleural pressure on record. It is interesting to note that no heart murmur developed at the time of the dislocation of the heart but could only be heard after three days had elapsed; this fact is in keeping with many other observations of a similar nature made at the Queen's Hospital and elsewhere.

The preliminary diagnosis of hæmo-pneumothorax was easy and was confirmed by the aspiration of Oct. 12th, but the ultimate diagnosis—the cause of the condition—could not be definitely made. The diagnosis which found most favour was that of ruptured aneurysm of the aorta, but tuberculous, malignant, or other erosion of a large vessel in the lung or pleura was also thought to be a possible cause. Perforating gastric ulcer (adherent to and bursting through the diaphragm) was at first sight simulated, the tenderness and rigidity of the left hypochondriac region being very marked; but the lack of any history suggestive of gastric ulcer, the prominent signs of large internal hæmorrhage, and the nature of the fluid aspirated seemed together sufficient to negative this diagnosis. With regard to aneurysm our chief difficulties were the absolute denial of syphilis, the youth and good arterial condition of the patient, and the presence of pneumothorax; the last-named sign was explained post mortem by the extensive ploughing up of lung tissue by the escaped blood. The main arguments against pulmonary disease were: (1) the rapidity of the hæmorrhage, showing that there must have been a large erosion of a large vessel; and (2) the lack of any sign or history of lung trouble, there having been no hæmoptysis even after the pneumothorax had occurred. I need hardly add that the diagnosis of ruptured healthy aorta was not considered. The ruptured portion of the aorta is now preserved in the Pathological Museum of the University of Birmingham.

I have to thank Dr. Kauffmann for permission to publish this case and for much valuable help in the preparation of these notes.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

An Address from the Society to King Edward VII.

A SPECIAL general meeting of this society was held on Feb. 5th, Dr. F. W. PAVY, the President, being in the chair.

The PRESIDENT explained that the meeting was convened to consider the presentation of an address to the new sovereign by the society that was instituted now close on a century ago for the cultivation and promotion of medicine, surgery, and allied branches of knowledge, and received in approval of its laudable design from King William IV. a Royal Charter of incorporation in which the King declared himself, and his successors if they should think fit, the patron of the society. On the late beloved Queen's accession to the throne she followed in the footsteps of her predecessors and became the patron and by her special sympathy helped the achievements of medical art. The society had met to give outward expression to what was inwardly felt by all in an address of condolence, associated with an expression of hope that His Majesty would, in accordance with the terms of the Charter, graciously think fit to declare himself the patron of the society.

MR. PEARCE GOULD, as secretary, then read the text of the address, the members all standing.

The PRESIDENT then called on Lord Lister to move the adoption of the address.

Lord LISTER felt it to be a great but an inexpressibly melancholy honour to propose the adoption of the address. In common with all the vast empire, and indeed with the whole world, they lamented the loss of a Sovereign pre-eminent in wisdom and in virtue, whose long reign was one constant, consistent effort to promote the good of her people and of all mankind. How signal had been the success with which that effort was crowned was evidenced by the

tributes to her greatness and goodness that had been pouring in from all quarters at home and abroad. It was fit that the only Royal medical society of the metropolis should give expression to their sense of grief at her death. The medical profession, whose object was to prevent or relieve the physical ills of mankind, appealed always to Her Majesty's warm and sympathetic heart, and if it were suitable to speak of loyalty of a Sovereign to subjects they might say that the medical profession never had a more loyal mind than it had in Queen Victoria. Those of her medical officers who had been privileged to attend upon Her Majesty would speak with one voice to that effect if they had been all alive to that day. Nothing could more strongly illustrate her complete confidence in her medical advisers than her submission to chloroform at a time when its use in midwifery was by no means generally recognised and when in influential quarters it was strongly opposed. Lord Lister believed that he happened to be the only person who ever exercised upon her sacred body the divine art of surgery. The occasion was a most critical and anxious one, but nothing could exceed her kindness and consideration, while she treated him with queenly dignity. Thus, the medical profession felt, perhaps, more than others the greatness of the loss they had sustained. There was, however, another side to the address. In the night of their deep sorrow they could see a most auspicious dawn. The King in his first Council meeting promised in words characterised equally by dignity and pathos that he would tread in the footsteps of his beloved mother, and that promise he had repeated in his message to his entire empire. Various kindly acts which he had been doing in the last fortnight indicated that the King had inherited the grace and tact of the departed Sovereign and it was known from his past life that he honoured and loved the medical profession—witness all that he had done for Guy's Hospital and witness the "Prince of Wales's Fund" in the prosperity of which he was known to take the keenest interest. Whilst, therefore, all condoled with him in his grievous sorrow they gladly congratulated him on his accession to his ancestral throne, confident indeed that he would be found walking in the footsteps of his mother, who as they believed had gone to her reward.

Dr. SYDNEY RINGER (in the absence of Sir WILLIAM CHURCH) seconded the motion for the adoption of the address.

The motion was carried unanimously.

PATHOLOGICAL SOCIETY OF LONDON.

Relative Agglutination Phenomena seen after Immunisation against the Typhoid Bacillus and its near Allies.—Agglutination of Plague Bacilli.—Formation of Urobilin from Bilirubin.—New Pathogenic Member of the Blastomycetes.—Bacillary Forms of Streptococci.

A MEETING of this society was held on Feb. 5th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. F. W. ANDREWES and Dr. H. A. SCHÖLBERG made a preliminary communication as to their Experiments on the Relative Agglutination Phenomena seen after Immunisation against the Typhoid Bacillus and its near Allies. Dr. Andrewes pointed out the importance of the quantitative factor in all observations on the power of agglutination; the degree of dilution in which the serum exhibited a clumping action had an important bearing in diagnosis. There were also theoretical points which might be elucidated by attention to the quantitative factor. It was desirable to learn the origin of the bacterial product which evoked the power of agglutination and the relationship between the powers of a given serum to clump the different members of the colon group of bacilli. Experimental immunisation against different members of the group offered the best chance of solving such problems. The questions attacked were: (1) Was the bacterial product which evoked the agglutinative reaction resident in the soluble toxins which could be filtered off from the bacterial culture or in the bacterial protoplasm itself? and (2) Was the reaction evoked by a product common to the different members of the colon group or by a product peculiar to each species? Klein and others had shown that there were intra-cellular poisons common to various species of bacteria; it was also clear that each produced its own specific toxins. In the experiments carried out (almost entirely by Dr. Schölberg) the aim was as accurate a quantitative estimation of the agglutinative powers as could be attained, and the results were exhibited graphically on plotted charts. The standard which was adopted was the upper limit of dilution which gave an approximately complete reaction within a time limit of one hour in living emulsions of bacilli prepared from recent gelatin cultures. The results of the experiments so far as they had yet been completed were as follows: (1) the bacterial product which evoked the agglutinative power resided in the bacterial protoplasm rather than the soluble toxin; (2) a share in the result was borne by a protoplasmic poison common to the bodies of allied bacterial species (for example, an animal immunised against the bacillus typhosus furnished a serum which would in lesser degree clump bacillus coli communis and Gärtner's bacillus); (3) in addition to this some specific intra-cellular substance was present which excited a higher degree of agglutinative power upon the particular species employed in the immunisation; and (4) the rabbit was found to be a more suitable animal than the guinea-pig for the development of the agglutinative power. Dr. Schölberg described in fuller detail the methods which he had employed in carrying out the experiments and the precautions which he had taken to avoid errors in the results. The toxin for the animal experiments was prepared in the usual way from broth cultures three months old and cultivations were made from it before inoculation to prove that the fluid was sterile, which was always the case. The bacterial injections were made from bacteria grown on dry agar entirely free from expression water. A suspension of a variable amount of an agar culture was made in sterile saline solution and heated to 70° C. for 15 minutes. Cultivations made from the bacteria injected were sterile. Broth cultures were not used in making the emulsions for agglutination tests, as these were unreliable. Gelatin cultures from 48 hours to 120 hours old were uniformly used for the preparation of the emulsions, which was done with sterile normal saline solution. The charts shown showed that the first agglutination occurred on the fifth or sixth day after inoculation with Professor Wright's sterilised typhoid broth cultures, bacillus coli and Gärtner appearing a day later as the typhoid maximum agglutination rose. The coli and Gärtner curves ran together, but independently of the typhoid agglutination curve. Inoculations in animals with pure typhoid toxin gave an average maximum dilution agglutinating power of 1 in 40 for typhoid, and coli and Gärtner were uniformly negative at that index—on one occasion only, when the typhoid index was 1 in 100, did coli and Gärtner agglutinate, and then only at a dilution of 1 in 10. Using the bacteria only in the case of typhoid the first agglutination appeared in the rabbit on the fifth day after inoculation, and bacillus coli and Gärtner on the sixth day. A maximum dilution of 1 in 500 for typhoid was represented by 1 in 50 for bacillus coli and Gärtner on the ninth day. Using guinea-pigs the reactions were not so high and showed that for the Gärtner bacillus when inoculated the reaction for typhoid and bacillus coli was uniformly negative, while the maximum agglutination for the Gärtner reached as high as 1 in 130.—Dr. HORTON-SMITH, Dr. WILLIAM BULLOCH, Dr. W. C. C. PAKES, Mr. S. G. SHATTOCK, and others joined in the discussion, and Dr. ANDREWES and Dr. SCHÖLBERG replied.

Dr. E. KLEIN made a communication on the Agglutination of Plague Bacilli. The difficulty of obtaining plague bacilli in emulsion was dealt on. Saline solution was the only medium with which he had succeeded. He had found that ordinary bouillon caused agglutination. Serum of rats that had been treated with Haffkine's serum and also that of rats that had been inoculated with plague bacilli and had recovered also agglutinated.—Mr. SHATTOCK observed that salt solution when added to blood prevented the corpuscles from forming rouleaux.

Dr. ARCHIBALD GARROD and Dr. J. H. DRYSDALE in a preliminary communication on the formation of Urobilin from Bilirubin showed that the process was far more obscure than was now generally taught.

Dr. KLEIN described a New Pathogenic Member of the Blastomycetes which he had isolated from milk. When injected into guinea-pigs subcutaneously it caused gelatinous tumours and glandular swellings. When injected intraperitoneally nodules in the liver, lung, pancreas, ovary or testes, and intestine followed. All the lesions contained vast numbers of the micro-organism and in the tissues some of the latter assumed hypha-like forms which were absent in the cultures. These blastomycetes stained readily and so differed from those described by Fullerton. They grew

better on alkaline than on acid media and in that differed from those described by Sanfelice, Roncali, and Plimmer.

Dr. M. H. GORDON drew attention to a Morphological Feature exhibited by Several Streptococci isolated from the Normal Throat to form here and there an individual that in shape resembled a bacillus more closely than a coccus. It was stated that in some cases these bacillary individuals were apt to bear a morphological resemblance to forms of the diphtheria bacillus, for which they might conceivably be mistaken unless due care was exercised. It was remarked that the significance of the phenomenon could only be properly understood by making systematic comparative observations in the course of which the other biological characters of these organisms were also taken into account. Lantern slides were shown of streptococci exhibiting bacillary forms.

Dr. ANDREWES and Dr. W. J. HORNE demonstrated the Collodion Method applied to Paraffin Sections for Class Purposes.

OPHTHALMOLOGICAL SOCIETY.

So-called Paresis of Divergence.—Eclipse Blindness.—Bullet Injury of the Occipital Lobes, with Loss of the Lower Half of Each Visual Field.

AN ordinary meeting of this society was held on Jan. 31st, Mr. G. ANDERSON CRITCHETT, the President, being in the chair.

Dr. G. A. BERRY read a paper on So-called Paresis of Divergence. He cited cases and showed diagrams in support of his theory that the cause was really overaction of convergence rather than paresis of divergence. In cases where there was doubt whether strabismus fixus was present or not the diagnosis was much facilitated by taking hold of the eye with a pair of fixation forceps and forcibly rotating the globe outwards. If this could be done it was clearly not a case of strabismus fixus, while if it were impossible then it proved that it was a true case. He also read notes on some rare forms of non-paretic, non-concomitant squint in which, through faulty innervation, muscles not usually associated worked together, such as the internal rectus of an eye with the superior rectus of the other.

Dr. RAYNER D BATTEN reported a case of Eclipse Blindness with Thrombosis of a Retinal Artery and Hæmorrhage into the Vitreous. The patient was a woman, aged 28 years, who watched the eclipse on May 28th, 1900, without any other protection than that offered by screwing up the eyes and looking between her fingers held close together. Immediately afterwards she noticed that things looked black and the next morning she found that she could only see "portions of things." She was first seen on June 6th and was found to have lost the lower half of the field of vision in the left eye. The vision was $\frac{6}{9}$. Above the optic disc a white patch was seen, possibly an absorbing hæmorrhage, while the hazy and œdematous retina obscured the view of the disc and retinal vessels. The œdema increased until June 20th and then rapidly cleared, ultimately leaving a patch of choroido-retinitis above the disc. One of the upper retinal arteries was occluded and the others were reduced in size. The vitreous opacities cleared and the macula was unaffected. The vision improved to $\frac{6}{9}$ in the injured eye. In the right it was $\frac{6}{6}$. The patient was in good health and no other cause could be found for the injury except exposure to direct sunlight.—Mr. J. B. LAWFORD had observed three cases of eclipse blindness, but there were no ophthalmoscopic changes. In all, however, the scotoma had persisted with some deterioration of vision.—Mr. TREACHER COLLINS related two cases. In one the margins of the discs became very white and there was a central scotoma. In the other the vision improved, but the fields were greatly contracted for white and those for colours were very much smaller.—Mr. W. H. H. JESSOP had published three cases. In all the vision improved, though there was a slight permanent scotoma.—Mr. T. J. BOKENHAM gave details of two cases, in one of which there were retinal hæmorrhages. The vision improved from $\frac{6}{60}$ to $\frac{6}{12}$, but there was a marked central scotoma.—Dr. G. A. BERRY thought the scotomata were usually permanent in the worst cases. The general public was not sufficiently aware that blue glasses were worse than useless when looking at the sun and at bright lights. It was the blue and violet rays which did all the damage. In Russia red or yellow glasses were employed.—Dr. JOHNSON TAYLOR, considering the marked way in which Dr. Batten's case differed from eclipse blindness, asked if there was at any time keratitis punctata, as he thought the whole condition might be due to irido-cyclitis.—Dr. BATTEN, in reply, stated that no keratitis had been seen and he could find no cause for this condition other than that given.

The PRESIDENT described a case of Bullet Injury of the Occipital Lobes with Loss of the Lower Half of each Visual Field. The patient, a captain in the British army, was struck by a bullet (probably Lee-Metford) while turning to address his men on the left. The pain was likened to that caused by a blow from a racquet-ball. He lost his sight at once but did not become unconscious for half an hour. He remained comatose for eight days and on recovering consciousness was still blind, but a week later was able to distinguish the flash of a lighted match. He was trephined on the day following the injury, he believed at both the point of entry and exit of the bullet. The trephine aperture at the site of entry, marked by a distinct depression, was situated two and a quarter inches above Reid's base line on the right side in a vertical line above the posterior border of the mastoid process and one and a half inches below and slightly behind the parietal eminence, four inches from the external occipital protuberance. The aperture of exit was half an inch to the left of the middle line, two inches above the protuberance, and one inch below the lambda. When examined the pupils were active directly and consensually, the fundi were normal, and the vision in each eye was $\frac{6}{9}$ and Jaeger 1. The patient had been prevented from entering the navy by colour-blindness. The lower half of each visual field was lost almost completely, the line of limitation being irregular. This feature was the chief point of interest as it afforded evidence of interference with the cortical visual centres. The bullet must have traversed the skull horizontally from before backwards and from right to left, and brain substance had been recognised at the time of injury. The course of the bullet must have been through the anterior part of the right middle occipital convolution, injuring also the right and left cuneus. The sudden impact probably caused temporary paralysis of the visual centres from concussion. That there was a considerable extravasation of blood was proved by the rapid onset of unconsciousness, and this or the actual injury caused by the bullet may account for the persistent failure of the lower half of the visual fields, though on the latter supposition it is difficult to explain the exact symmetry of the visual loss. In a recent number of THE LANCET[1] Mr. Page had published a case of injury to the right occipital region attended with homonymous hemianopsia on the left side, complete at first, but subsequently recovering. No optic neuritis could be detected in either of these cases.—Mr. FISHER gave details of two cases of similar character to that cited, the lower half of the fields being lost—altitudinal hemianopsia.

The following cases and card specimens were shown:—

Mr. W. H. H. JESSOP: (1) A case of Tuberculosis of the Conjunctiva; and (2) a case of Probable Distension of the Frontal Sinus in a girl, aged 10 years.

Dr. W. A. STIRLING: A specimen of Primary Sarcoma of the Orbit.

Mr. W. LANG: New Growth on Ocular Conjunctiva, probably a papilloma.

Mr. J. B. LAWFORD: Concussion Injury of the Eyeball with a "hole" at the macula.

Mr. W. T. LISTER: Spreading Opacity of the Cornea following herpes ophthalmica.

Dr. W. C. ROCKLIFFE: Sections of a Conjunctival Growth. The nature of this being doubtful it was proposed to refer it to a committee.

KIDDERMINSTER MEDICAL SOCIETY.—A meeting of this society was held on Jan. 18th, Mr. J. Lionel Stretton, the President, being in the chair.—The President referred to the death of the late Queen and proposed a resolution of condolence.—The President read notes of three cases of Resection of the Intestine. In the first case the patient was a man, aged 64 years, who had been ruptured for many years, the rupture being always down and no truss being worn. Six months previously he had an attack of obstruction which was relieved. The present attack commenced seven days before admission to hospital; the patient refused to submit to operation at an earlier period. Under ether the sac was opened up and two strictures were found, one at the neck and

[1] THE LANCET, Jan. 19th, 1901, p. 156.

the other about the centre, the latter being so sharp and tight that it had reduced the calibre of the bowel to the size of a tobacco-pipe stem, and had so thinned the walls that fæcal matter was already escaping. The strictured portion of the bowel was removed and the ends were approximated with Murphy's button; the sac and testicle were removed. The man was discharged within a month well; the button was not found but soon after he left the hospital a hard motion was passed which was not examined. The hernia had not been down since. In the second case the patient was a female, aged 65 years, who had suffered from umbilical hernia for many years, no support being worn. She was very fat and her capillary circulation was bad. Strangulation took place 24 hours before admission to hospital. Ether having been administered an incision liberated several coils of stinking gangrenous intestine. 38 inches of the small intestine were excised and the ends were approximated with Murphy's button. The operation lasted about one and a half hours. She suffered considerably from shock and died six hours later in spite of saline transfusion and hypodermic injections of strychnine, &c. Nothing unexpected was discovered at the necropsy; the intestine was quite secure and the peritoneum was healthy. In the third case the patient was a female, aged 44 years, who had suffered from umbilical hernia for many years, but refused to wear a truss, as she was always able to return the hernia until six months ago, since which time a small portion had been irreducible. She was stout and plethoric with bad capillary circulation. Strangulation had existed for six days. Under ether, an incision disclosed a mass of adherent omentum and a coil of gangrenous intestine which had given way in three or four places and allowed free escape of fæcal matter. About eight inches of small intestine were removed and the ends were approximated with Murphy's button and returned into the abdomen. The operation lasted about one and a half hours. Death took place about 54 hours afterwards. At the necropsy the Murphy's button was found to be securely fixed and had not allowed any oozing; there were no signs of peritonitis.—Dr. Evans read notes of a case of Cancrum Oris. The patient was a male child, aged four years, who had had measles five weeks previously. The left cheek was considerably swelled, discoloured, and hard, and there was a slough of the size of a shilling inside the cheek opposite the last molars. There was much salivation, the breath was very offensive, and the pulse was weak and rapid. Under chloroform the sloughing area was well cauterised with Paquelin's cautery and afterwards swabbed out with fuming nitric acid; this treatment was repeated ten days later and again in four days, and again after the lapse of seven weeks. The child was now showing signs of improvement.—Dr. E. A. Naylor read notes of a case in which the President had removed a portion of the lower jaw for malignant disease.—The President read a very amusing paper on the Humours of the Profession and the meeting terminated.

Reviews and Notices of Books.

Bacteriology in Medicine and Surgery: a Practical Manual for Physicians, Health Officers, and Students. By WILLIAM HALLOCK PARK, M.D., Associate Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, and Assistant Director of the Research Bacteriological Laboratories of the Department of Health, City of New York. Assisted by A. R. GUERARD, M.D., Assistant Bacteriologist, Department of Health, City of New York. London: Henry Kimpton. 1900. Pp. xi.–693. Price 15*s*.

THE student of bacteriology has before him at the present day a considerable number of text-books, all more or less on the same lines, moderate in price and not too voluminous for his needs. Future editions will demonstrate which of these works are to survive in the struggle for existence. So many of them are of merit that the struggle must be a keen one, but amongst those which should be able to hold their own we are inclined to place the present volume. Professor Park's name is familiar in America, and some of his work is well known in this country. His wide experience in the practical applications of bacteriology, gained in the Research Laboratories of the Health Department of New York, has combined with his teaching experience and his wide knowledge of scientific literature to render his book one of exceptional usefulness. If the city of London had the wisdom and foresight to endow well-equipped research laboratories in science on the same scale as the city of New York has done a valuable impetus would be given to the scientific study of medicine and public health.

There is little in the scope and arrangement of the book that is novel or demanding of special comment. It is simply an ordinary text-book and it stands or falls just in so far as it fulfils ordinary requirements; we venture to think that it fulfils these very adequately. Like all text-books it is essentially a compilation, amplified as well as verified by the experience of the writer. So far as it is a compilation it strikes us as essentially an American and a German one—that is to say, we do not find references to the English or the French schools of bacteriology quite so numerous as they perhaps deserve. To take a single instance, we find in the chapter on Small-pox no reference whatever to the observations of Klein and of Copeman on the spore-bearing bacillus which they have demonstrated in the vesicles of variola and vaccinia, and no detail at all as to the successful production by Simpson, Klein, and others of typical vaccinia by the passage of variolous lymph through a series of calves. It is nevertheless true that the admirable acquaintance with German literature possessed by the writer renders his book so full and complete on the majority of subjects that few faults of omission can be ascribed to it. The experience of the author likewise stands him in very good stead, as is well shown in the chapter on Diphtheria, which appears to us as excellent a presentment of the subject in its most modern aspects as we have ever read. Nevertheless, we must dispute the statement that no authentic cases of the transmission of diphtheria from animals to man are on record. Mr. W. H. Power's observations on milk diphtheria go far to incriminate the cow in certain cases, and Dr. Bruce Low has brought forward facts to show that cats may transmit the virus to human beings.

The chapter on Tuberculosis is also one which appears to us of special excellence and great practical value, though more detail might have been given as to the methods employed by Koch in the manufacture of his new form of tuberculin. The section on the bacteriological examination of water is disappointing, and the statement that we can only examine at one time a few cubic centimetres of water by bacteriological methods is quite erroneous since the introduction of the method of concentrating the bacteria from a litre or more of water into a small compass by the use of a Pasteur filter. No mention is made of Parietti's method or its modifications in examining water for typhoid or colon bacilli. In the account of flagellum staining the only method described in detail is a modification of Löffler's somewhat cumbrous original one. Van Ermengem's infinitely better method, though mentioned, is not described, nor are any of the short and easy methods of recent introduction, such as Pitfield's or Muir's, even alluded to. A moderate number of misprints are present; in particular we would call attention to the substitution of "symmetrically" for "hermetically" on p. 23. There are two good coloured plates and 87 figures, mostly reproductions of microphotographs. These are not so good as might have been expected; the figures of flagella in typhoid bacilli are exceptionally poor.

If we have called attention to certain points in which we conceive Professor Park's book might be improved we have done so from a sense of duty and with the full knowledge that it is an easy thing to pick holes in another man's work. It is a much more pleasant task to congratulate the writer on

the general excellence of his achievement, which we can do in all sincerity. It may safely be recommended to all whom it may concern as an unusually full and complete guide to the medical aspects of bacteriology, and it owes a good deal of its value to its eminently practical character.

A Manual of Medicine. Edited by W. H. ALLCHIN, M.D., F.R.C.P. Lond., F.R.S. Edin., Senior Physician and Lecturer in Clinical Medicine, Westminster Hospital; Examiner in Medicine in the University of London and to the Medical Department of the Royal Navy. Vol. II. General Diseases—continued. London: Macmillan and Co., Limited. 1900. Pp. 380. Price 7*s.* 6*d.*

THE second volume of this manual contains a large number of papers on varied subjects: for example, diseases caused by parasites and by poisons introduced into the body, primary perversions of general nutrition, and diseases of the blood.

The section on Diseases caused by Parasites is under the joint names of Dr. T. W. Shore and Mr. James Cantlie and contains good descriptions of all the chief forms of parasites that infect man, especial attention being given to the Cestoda and Hæmatoda. Under "Diseases Determined by Poisons Introduced into the Body as Such," we find articles by Dr. W. H. Allchin and Dr. G. V. Poore on Food Poisoning, Alcoholism, Morphinism, Cocainism, the Metallic Poisons (phosphorus, arsenic, mercury, and lead), Various Gases, Sewer Gas, and Serpent's Venom. These articles are of varying merit, some being very good, whilst others, notably that on alcoholism and morphinism, are not up to the standard of the work in general. Some of the contributions, too, on "Autogenetic Poisons" show signs of hurried preparation. Dr. Allchin's remarks on "Retrogressive Changes—Necrobiosis" are very interesting and would give a student a comprehensive idea as to the nature of atrophy and of fatty and lardaceous degeneration, while we particularly note the sub-section on "Senility" as containing much useful information. Dr. W. S. Lazarus-Barlow is responsible for the section on "Inflammation and its Sequels." This is by no means an easy subject to write upon, but the author has succeeded in presenting his readers with a capital summary of our present knowledge of inflammation, its signs, causes, varieties, and sequels. Professor J. Rose Bradford writes an excellent series of articles on the General Physiology and Pathology of Ductless Glands, on Cretinism and Myxœdema, Exophthalmic Goitre, and Addison's Disease.

The section on Diabetes Mellitus is by Dr. Bertrand Dawson. In speaking of the pathology of the disease he draws attention to the fact, which has only comparatively recently been fully recognised, that in patients afflicted with diabetes mellitus the power of sugar destruction is less than in health. This should have an important bearing on treatment. Dr. Dawson's remarks on treatment show sound judgment and the most modern views. He points out that the removal or retention of carbohydrates in a diabetic diet is a matter of moment and attended with disadvantages as well as advantages. The disadvantages are the difficulty of maintaining nutritive equilibrium and the ill-effect on appetite and spirits of the patients of the withdrawal of some of the most cherished articles of food, especially bread. A large number of diabetics can take some carbohydrates greatly to their advantage, and the amount must be accurately ascertained by frequent examinations of the urine. Dr. Dawson likewise contributes the article on Rheumatoid Arthritis and gives a clear and comprehensive account of this condition. We are glad that he has only given one synonym—viz., arthritis deformans—and discards the terms "osteo-arthritis" and "rheumatic gout," the last named especially being open to numerous objections.

A sound disquisition on Gout is from the pen of Dr. A. P. Luff, whose observations on treatment are particularly worthy of note, for many useful hints will be found in them, not only in reference to the treatment of the disease as it usually manifests itself, but also as regards the management of the irregular forms. Dr. Louis Jenner contributes an interesting account of the Blood under Normal Conditions and the Methods of Examining it Clinically. This subject is just now commanding a good deal of attention and Dr. Jenner's comments will be read with much interest.

One of the best sections in the book is that on Diseases of the Blood, by Dr. Sidney Coupland. From the time when Dr. Coupland delivered the Goulstonian Lectures on Anæmia in 1881 he has been a recognised authority on the variations of blood in disease, so that his contribution has the value of being the outcome of many years of personal observation. The anæmic group of blood diseases and the hæmorrhagic group are fully described, their pathology, clinical character, and treatment being considered at length. Under the first-named group Dr. Coupland places chlorosis, pernicious anæmia, leukæmia, splenic anæmia, and Hodgkin's disease; and under the second hæmophilia, purpura, scorbutus, and paroxysmal hæmoglobinuria. So much has recently been added to our knowledge on the pathological conditions of the blood that a summary of the investigations of various authorities is most welcome, and when to such a summary there is added a large clinical experience we obtain a really valuable monograph.

Other contributors to this volume are Dr. Bertram Abrahams, who writes on Myalgia and Myositis Ossificans; Dr. J. A. Coutts, whose article on Rickets is full of useful knowledge; and Mr. Raymond Johnson, who is the author of several good sections, for example, the articles on Acromegaly, Hypertrophic Pulmonary Osteo-arthropathy, and Osteomalacia.

This volume contains an account of many morbid conditions which are but very briefly touched upon in most text-books, and the efforts of the editor and his contributors will, we hope be duly appreciated by the medical profession.

The Histology of the Blood, Normal and Pathological. By P. EHRLICH and A. LAZARUS. Edited and translated by W. MYERS, M.A., M.B., B.Sc.Camb., with a Preface by Professor G. SIMS WOODHEAD. Cambridge University Press. 1900. Pp. xiii.-216. Price 5*s.*

THERE is probably no scientific subject to which Professor Ehrlich has devoted his serious attention without making brilliant contributions to our knowledge. Modern hæmatology is under a deeper obligation to him than to any other worker in the field, for his classical researches upon the varieties of leucocyte present in the blood, based upon the methods of differential staining which he devised, form the foundation upon which all subsequent progress has rested. This book is a translation of the first part of "Die Anæmie: Nothnagel's Spezielle Pathologie und Therapie, vol. viii.," and the late Dr. Walter Myers has carried it out under the personal supervision of Professor Ehrlich and has included in it certain valuable alterations and additions.

Dr. Myers is the brilliant young physician who recently lost his life at Para whilst making investigations for the Liverpool School of Tropical Medicine into the etiology of yellow fever. The service that he has rendered to English readers by this translation is a very great one. The work has been recognised in its German dress as one of standard authority and it has lost none of its value in the translation. In spite of its small size it contains a more complete, thorough, and scientific account of the blood than any work in the English language with which we

are acquainted, and it has, above all, a certain quality to which we can apply no better word than "fundamental." That is to say, it always strives to exhibit as clearly as possible the principles which lie at the root of the matter under consideration. For this reason, even where the root of the matter is as yet unattained, the book possesses a faculty too often missing in more pretentious works—that of a suggestiveness which should go far to stimulate further work on the lines laid down.

The following is a brief outline of the manner in which the subject is treated. The introduction deals with the clinical investigation of the blood—i.e., with the volume of the blood, the number of corpuscles, the specific gravity, alkalinity, coagulability, and kindred matters. The morphology of the blood is then described in detail and the methods of its investigation are fully dealt with; the theory of blood-staining is explained in a most luminous manner. The normal and pathological histology of the red corpuscles is then discussed, after which comes the most important and the largest section of the book—that devoted to the leucocytes. Each form of leucocyte is described in full and its place of origin carefully considered. Naturally the nature of the cell granules receives the attention due to so important a subject. Next comes a consideration of the conditions under which the leucocytes are increased in number, perhaps the most suggestive section in the whole work. After discussing the biological importance of leucocytosis, its forms are dealt with under three headings—first, polynuclear neutrophil leucocytosis; secondly, polynuclear eosinophil leucocytosis; and thirdly, leukæmia, which is described as a "mixed" leucocytosis. It has been customary to regard leukæmia as a thing different in its essence from ordinary leucocytosis, but it is impossible to read these pages without feeling the force of the arguments showing its correspondence with the active leucocytoses. After a short account of leucopenia a bibliography and index conclude the book.

The work is illustrated by three plates, uncoloured, but good. They illustrate, however, comparatively unimportant points in the histology of the blood. It would, in our opinion, have been a great gain to the student had the descriptions been illustrated more copiously by good coloured plates. We know, however, the enormous expense of such illustrations. The translation is admirable in style and reflects great credit on the late Dr. Myers—indeed it is as readable as if originally written in English. There are too large a number of misprints. The preface by Professor Sims Woodhead is an excellent introduction to the subject and we cannot doubt that, as he says, this book must be looked upon as influencing the study of the blood more than any which has yet been published.

Essentials of Practical Bacteriology. By H. J. CURTIS, B.S., M.D. Lond., F.R.C.S. Eng. London: Longmans, Green, and Co. 1900. Pp. 291. Price 9*s*.

THIS is an elementary laboratory book for students and practitioners which in its plan and general "get up" reminds us of a similarly entitled book by Professor W. D. Halliburton, "The Essentials of Chemical Physiology." It belongs to the excellent series of "Essentials" published by Messrs. Longmans for students and practitioners. Primarily the work is intended for those seeking the diploma in public health, but we are glad to find that the author, without unduly burdening the volume, has paid attention to the special needs of clinical bacteriologists. A considerable amount of detail has been given in dealing with certain subjects, notably ringworm and cancer, and the author thinks some objection may be taken to his more ample treatment of these topics. He has, however, made exceptions in these cases in the hope that the chapters will provide a starting point for research in the directions indicated by the application of modifications of methods and media already known. Accordingly this portion of the subject is intended for advanced students only. The work is divided into Part I., dealing wit the preparation, or manufacture as the author prefers to call it, of the nutrient media and with general technique, and Part II., dealing with the systematic study of the micro-organisms, both non-pathogenic and pathogenic. The book is eminently practical in the treatment of the subject and should do good service in placing before bacteriological students the best and most reliable methods of practice. Illustrations of the various organisms are given and examples of staining are also given which are admirably reproduced. On page 51 the example is spore staining by Möller's method. On page 141 the example is tubercle bacilli in a centrifugalised deposit from urine stained by Ziehl-Neelsen's method. The examples on page 151 are in the one case bacillus lepræ in discharge from an ulcer on the great toe, and in the second, bacillus lepræ in lepra cells in skin, both stained by Ziehl-Neelsen's method. We are glad to find that the author has in Lesson XXIII. given the bacteriological methods for testing antiseptics and disinfectants. The appendices deal with the requisites for a good bacteriological microscope, the methods for fixing hardening, and imbedding tissues; and lastly, two useful tables for reference and a recapitulation of facts. The series of lessons is good, and the whole work we have found most instructive upon the applied side of the subject.

A Manual of Clinical Diagnosis by means of Microscopic and Chemical Methods, for Students, Hospital Physicians, and Practitioners. By CHARLES E. SIMON, M.D., late Assistant Resident Physician, Johns Hopkins Hospital, Baltimore. Third edition, thoroughly revised. Illustrated with 136 Engravings and 18 Plates in Colour. London: Henry Kimpton. 1900. Pp. 558.

IN reviewing the third edition of a work no words are required from us to explain its general scope. The fact that the first edition was published only in 1896 is sufficient proof that the author's efforts to supply a want for a book of this nature have met with favourable recognition. Since Dr. Simon first wrote this manual great changes in regard to clinical laboratories have taken place. Such institutions are now numerous and are regarded as being adjuncts to medical education as important as chemical and pathological laboratories, and the classes in "practical medicine" at the various schools include instruction in the use of the microscope and chemical methods. A study of the volume will show that in this edition the work has been thoroughly revised, much new matter added, whole sections have been re-written, methods rendered obsolete by the rapid advances of the science have been replaced by those representing the latest progress, and new illustrations added when necessary.

The first chapter describes the Examination of the Blood, and our remarks are exemplified by a perusal of its 121 pages. All the methods employed are fully up to date; for example, the estimation of the amount of iron in the blood in Jolles's ferrometer is fully given. The account of the microscopic examination of the blood is also worthy of praise. We would especially draw attention to the account given of the behaviour of blood corpuscles towards the anilin dyes. The anæmic or polychromatophilic degeneration of the red corpuscles is duly considered and a beautiful plate is given illustrating the blood of pernicious anæmia. The differentiation of leucocytes, to which so much attention has recently been directed, is also well explained, although the matter is rather a complicated one. The method of applying Widal's serum test is duly given, Dr. Simon giving as his opinion that the test "is a most valuable aid in the diagnosis of typhoid

fever, but cannot be relied upon to the exclusion of other symptoms." In the chapter on the Examination of the Sputum a plate has been introduced showing eosinophilic leucocytes and free granules in the sputum from a case of bronchial asthma. These bodies, however, are by no means characteristic of the sputa of asthma; they are present in a large percentage of tuberculous cases. Teichmüller regards their occurrence as evidence of a defensive struggle on the part of the body.

The whole work is characterised by thoroughness and clearness of description and we predict that further editions will be called for.

A Compendium of Insanity. By JOHN B. CHAPIN, M.D., LL.D., Physician to the Pennsylvania Hospital for the Insane. London and Philadelphia: W. B. Saunders and Co. 1900. Demy 8vo. Pp. 234. Illustrated. Price 5*s.* net.

THE present Compendium of Insanity is a useful and unpretentious work which will take its place among the many smaller manuals and handbooks on the subject of mental diseases of which the past two or three years have been so prolific. Though not likely to be much used in this country, it will probably be serviceable as an introduction to the more elaborate and comprehensive works of Spitzka and Kellog which have hitherto marked the more advanced lines of American psychiatry.

The standpoint of the author is metaphysical, the human mind being postulated as an "essence of which we can form no conception." He makes little of recent discoveries and advances in psychology and much of the old division of the mind into faculties on the basis of metaphysical speculation. The result is that the work is throughout marked by the stamp of the antique and the methods of the metaphysical. The clinical divisions into mania, melancholia, and dementia follow well-known lines without any attempt at psychological analysis or at correlation of psychical symptoms with pathological changes. Then follow short accounts of paresis (general paralysis of the insane), epilepsy, and the briefest reference to abnormal psychical states marked by automatism and loss of memory—a condition of great medico-legal importance. We seek in vain for any account of such conditions as moral insanity, hebephrenia, alcoholic and other toxic insanities, circular insanity, or the psychoses of the climacteric. Six photographic plates illustrating the physiognomy of various insane patients are intercalated in the text. The printing is large and clear and the text is readable. The work is one to be read with caution, as it is both defective in regard to facts and dates and much behind the times from a medical and scientific standpoint. It is partly directed at a lay audience.

LIBRARY TABLE.

Alcaloïdes Usuels. Par Dr. M. BARNAY. Paris: Société d'Éditions Scientifiques. 1901. Pp. 386. Price 6 fr.—This book, comprising two volumes in one, forms No. 39 of the "Petite Encyclopédie Médicale." Dr Barnay in an impassioned "ante scriptum" implores his readers not to skip the first chapter of his book although, as he confesses, they are very likely to do so. We have read the chapter in question which is chiefly taken up with pointing out that most modern therapeutical preparations are uncertain and contain very different amounts of the active drug which it is wished to give. He quotes as an instance of uncertainty a very favourite remedy known as "*baume tranquille.*" In this preparation we find, he says, "belladonna elbowing hyssop, tobacco flirting with lavender, which in its turn has henbane for a neighbour, while datura fraternises with St. John's wort and elder flowers, &c. 19 substances in all without, for the most part, any bond of action." Dr. Barnay concludes by saying that instead of crude drugs the well-defined active principles should be substituted. The body of the book contains an account of the various alkaloids and glucosides arranged in alphabetical order. Each section is headed by a summary of the diseases and symptoms in which the drug is found useful. Then follow a description of the alkaloid in question, its physiological properties, its therapeutic indications, the dose, the modes of using, and the toxicology. In many cases Dr. Barnay apparently recommends the use of the pure alkaloid, but in some cases that of its salts or compounds, such as cantharidate of potassium or hydrochlorate of codeine. It has always seemed to us that if any salt of an alkaloid is employed it should be that salt which is found in the crude drug, such as, for instance, tannate of caffeine, meconate of morphine, or lactate or igasurate of strychnine. And probably the natural salts are superior to the pure alkaloid, which does not exist as such in nature. Though we do not agree altogether with Dr. Barnay's views his book will be found very useful.

Lehrbuch der Anorganischen Chemie. Von Professor H. ERDMANN in Halle. Mit 287 Abbildungen, einer Rechentafel, und sechs farbigen Tafeln. (*Manual of Inorganic Chemistry.* By Professor H. ERDMANN. With 287 Illustrations, a Reckoning Table, and six Coloured Plates). Braunschweig: Druck und Verlag von Friedrich Vieweg und Sohn. 1900. Pp. 758. Price 16 marks.—The first edition of this manual was issued a little over two years ago, and in our review of that edition we pointed out that the author evidently inclined to the view that the purely mathematical portion of the science should be presented to the student before he has made any practical acquaintance with the subject. We dissent from this view, as we think that theoretical study is immensely facilitated by a preliminary glimpse afforded by a few simple experiments of the nature of chemical change. Professor Erdmann starts by discussing in the very first chapter decimal fractions and the use and value of logarithms. The chapter is preliminary to the discussion of mass and weight, physical change and temperature, which in their turn precede the chapters on atomic theory. The rest of the work is divided into a part dealing with Metalloids on page 76 and a part on Metals on page 475. The account of the present position of chemical theory is excellent. The author is evidently *au courant* with the work and investigation of English chemists, for again and again he refers to the contributions that Englishmen have made towards both the expansion of theory and the accumulation of fresh facts. The book is fully and well illustrated, while the coloured plates showing the spectra of gases and of the newly-discovered elements are striking in their exact representation of the coloured lines characteristic of various elements. The colouring is most admirable and true. Although the second edition contains somewhat rather more matter than the first, yet its size is still within the limits of a manual. Not only does the book present an excellent and clear account of the theoretical considerations, but it gives also in some instances a description of the more important technical processes. Though a *lehrbuch*, the author has managed to give within its covers a very comprehensive and lucid treatment of the subject, and the work is thoroughly up-to-date.

Year Book of Pharmacy, 1900. Edited by LOUIS SIEBOLD, F.I.C., F.C.S. London: J. & A. Churchill. Pp. 597.—The British Pharmaceutical Conference held its meetings last year in London and a number of interesting papers were read and discussed. The papers together with the discussions are published in the transactions which form part of the publication before us. The rest of the journal is devoted to the past year's advances in chemistry, materia medica, and pharmacy. We congratulate the committee of publication upon the thoroughness with which this heavy work of abstraction is done. Their task has been most useful and most instructive and renders the Year Book a

valuable source of reference on the progress of the subjects indicated. The introduction is an excellent *précis* of this progress.

The Microscopy of the More Commonly Occurring Starches. By HUGH GALT, M.B., C.M. Glasg., D.P.H. Camb. London: Baillière, Tindall, and Cox. 1900. Pp. 114. Price 3*s.* 6*d.*—This little work is the outcome of a most useful piece of research relating to the identification of the more commonly occurring starches. We hope that the author will go on further with his work and develop the subject on the admirable lines of this instalment. It is a fact that accuracy in regard to description and delineation of the commonest starch grains is the exception rather than the rule in most text-books on the subject. The author has taken micro-photographs of the various starches, employing in the first instance dark ground illumination and in the second instance transmitted light. He has thus obtained some remarkable results which are quite contrary to the illustrations usually portrayed. One paragraph on this subject we cannot resist quoting. It is so good and illustrates the spirit in which the author has conducted his research. "In the light of the usual illustrations of potato starch what I have just said may appear somewhat startling; but as to its correctness there is no doubt, and, unlike many elaborate experiments, it may be verified with very little trouble by anyone with even an elementary knowledge of microscopy. So prone is man to accept without question the statements and illustrations of previous observers that the most misleading descriptions and figures—not of starches alone but of many other objects—appeared, and still appear, in many of the standard works dealing with the most diverse subjects." How true this is. As we have said, we trust that the author will pursue this interesting line of investigation further and give us the same valuable record of his results. The book will be most useful to analysts and laboratory workers in public health. It is illustrated by 22 original micro-photographs.

Mother, Baby, and Nursery: A Manual for Mothers. By GENEVIEVE TUCKER, M.D. London: T. Fisher Unwin. 1900. Pp. 193. Price 1*s.*—We reviewed the first edition of this book in our issue of April 9th, 1898 (p. 1004), and can find nothing new in the present edition. The two best chapters in the book are the last two which are respectively entitled, "Nursery Pointers" and "Nursery Don'ts." The advice given upon feeding is sound and we are particularly pleased to see that the author insists upon the necessity of babies being allowed pure water to drink, and that milk is more a food than a drink. Great stress, too, is very properly laid upon the harm done by giving babies anodynes or soothing syrups. We are sorry to see that some of the advertisements bound up with the book set forth the virtues of various quack medicines and of a book written by a quack. Probably the publisher is to blame for this, but we think that Dr. Tucker might see to it that such advertisements are omitted in future editions.

ARMY MEDICAL SCHOOL, NETLEY.

THE winter session of the Army Medical School was brought to a close on Jan. 31st. Owing to the continuation of the war in South Africa there was no public function in the school and owing to the circumstance that the surgeons-on-probation of the Royal Army Medical Corps had only been enabled to spend two months instead of four at the Army Medical School the surgeons-on-probation of the Indian Medical Service alone competed for the prizes and medals. The prizes were distributed by the principal medical officer of the Royal Victoria Hospital in the presence of the surgeons-on-probation of the Indian Medical Service and of the following officers: Professor A. E. Wright, M.D. Dub., Colonel K. MacLeod, M.D Edin., LL.D. Aberd., Lieutenant-Colonel W. E. Webb, M.D. Aberd., R.A.M.C., Major W. Dick. F.R.C.S. Edin., R.A.M.C., Major R. H. Firth, F.R.C.S. Eng., and Major W. W. Webb, M.D. Aberd.

Before handing the prizes to the successful competitors Colonel W. J. CHARLTON, the principal medical officer, addressed some well-chosen words to the assembled surgeons-on-probation who have been recommended for commissions as lieutenants in the Indian Medical Service. Colonel CHARLTON said: "It is my pleasing duty to-day to present the prizes to those who have been successful in the late examination, and in doing so I offer you my warmest congratulations on the distinctions which you have gained, which must be a source of much gratification and pride to each of you. I wish, however, to impress upon you the necessity of not discontinuing your studies now that your time at Netley has terminated. The real battle of life only begins on your leaving here, and your future success depends on the steady and earnest acquisition of knowledge which the prizes you receive to day should stimulate you to endeavour to obtain. You are about to join a service of which I have some knowledge and experience, gained during 15 years' residence in India, and I can with confidence assure you that it is one you have every cause to feel a pride in. The Indian Medical Service is an old and time-honoured one, with a fine history and great traditions, and has associated with it many eminent and distinguished names, not alone in the domains of medicine and surgery and the allied sciences, but in that of diplomacy also—names which have shed a lustre on your service that time will not easily dim. The Indian Medical Service has conferred, and is daily conferring, innumerable blessings on the population of India and has been largely instrumental in ingratiating us and our rule with the people of that country and in enabling us to extend our empire and consolidate our power; in fact, it has been a most potent factor in the government of that country. In conclusion, I need only say that it should be your aim and object to preserve a high ideal and to try to follow in the footsteps of the great men who have preceded you, to maintain at all times the honour and good name of your service as faithfully as you would your own, so that you may transmit the same unsullied and untarnished to your successors; and in doing so I have no doubt but that you will steadily and surely attain success, and that when the day comes for you to sever your connexion with India you will have the happy reflection that you have done your duty to God and man."

The following lists show the names of the successful surgeons-on-probation. Those of the Royal Army Medical Corps were nominated to the school by the Secretary of State for War on the recommendation of the medical schools of the United Kingdom, and on leaving Netley they were subjected to a qualifying and placing examination only.

INDIAN MEDICAL SERVICE.

List of surgeons-on-probation who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list that follows:—

	Marks.		Marks.
*C. W. F. Melville	6001	W. D. Pringle	5002
†R. McCarrison	5924	A. W. C. Young	4982
‡J. Masson	5530	J. G. G. Swan	4838
§N. S. Wells	5411	R. M. Dalziel	4665
W. M. Anderson	5349	J. J. Robb	4416
E. H. B. Stanley	5180	S. A. Ruzzak	4302
W. H. Leonard	5166	R. B. B. Foster	4182

* Gained the First Montefiore Prize of £21 and Medal.
† Gained the Herbert Prize of £20, the Martin Memorial Medal, the Second Montefiore Prize, and the Prize in Pathology presented by Surgeon-General W. Hooper, C.S.I.
‡ Gained the Maclean Prize in Clinical and Ward Work.
§ Gained the de Chaumont Prize in Hygiene.

ROYAL ARMY MEDICAL CORPS.

List of nominated surgeons on probation who were recommended for commissions in the Royal Army Medical Corps at the close of the eighty-first session:—

A. J. W. Wells.	J. V. Roche.
G. F. Sheehan.	A. J. Hull.
H. H. Scott.	R. V. Cowey.
H. A. B. Branabury.	J. Conway.
M. W. Falkner.	J. H. Barbour.
R. N. Woodley.	F. E. Robinson.
E. Ryan.	S. Mason.
E. E. Parkes.	J. S. Bostock.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 9, 1901.

The King's Message.

WITH that thoughtfulness and tact which distinguish great rulers of men His Majesty the KING has found time in the midst of his own personal sorrow to send a message to his people. The message is divided into three messages, the first being headed, "To my people"; the others "To my people beyond the seas," and "To the princes and people of India." In the first message, which is general in its direction, His Majesty refers in terms of gratitude to the "universal expressions of what I know to be genuine and loyal sympathy with me and with the Royal Family in our overwhelming sorrow. Such expressions have reached me from all parts of my vast empire, while at home the sorrowful, reverent, and sincere enthusiasm manifested in the magnificent display by sea and land has deeply touched me." Sympathy in sorrow is all that it is vouchsafed to the nation to give, and the scenes of last week were the visible expression of a very real and heartfelt grief. Neither the KING, nor any one in the funeral procession, nor any spectator, could mistake the genuine nature of the popular manifestation. The absolute silence, a silence which could be heard, of the vast multitude, as the gun-carriage bearing all that was mortal of our late QUEEN passed, spoke in language that could not be mistaken. "To my people beyond the seas" is the happily worded address of the second message. How has the meaning and import of these words widened since the close of the reign of our other great Queen. When JAMES I. came to the throne, on the failure with ELIZABETH of the Tudor dynasty, the only possession of Britain beyond the seas was the plantation of Virginia. And now from lands unknown and undreamt of in those days, the sons of the blood have come to give their lives in South Africa for the empire's cause. How appreciated is their loyalty His Majesty's words fully show. The third message was as happy in wording and direction as the others. The great Empire of India in our recent seasons of national trouble has not been behindhand in fealty. Though it has been denied to the natives of that empire to show their loyalty by fighting, yet the feudatory princes sent their treasure, and those in a humbler rank came forward to perform an inestimable service, a service which had no lust of battle or excitement to spur them on, but one which wanted bravery as much, if not more than any other—the task of collecting and of removing the wounded. Gladly, we know, would the warrior tribes of India have fought under our flag, but this might not be. Let us never forget the services of the Indian dhoolie-bearers. And so to India, its princes and its people, the KING sends greeting and his promise to "endeavour to follow the example of the first Queen-Empress to work for the general well-being of my Indian subjects of all ranks and to merit as she did their unfailing loyalty and affection."

If the glory and the opportunities of empire are great, so also are its burdens and responsibilities. The ruler of the gigantic empire of Great and Greater Britain is not, however, we are proud to think, alone in bearing his burden. He is supported by the love and loyalty of a free people. And to no section of his subjects can King EDWARD VII. turn with more distinct assurance of support than to the members of our own profession. His Majesty's interest in medical matters is known to all. We are proud to think that he is a Fellow of the Royal College of Physicians of London and of the Royal College of Surgeons of England, while he has shown his esteem of medicine in a wonderfully practical manner. As PRINCE of WALES he was President of the oldest hospital in these islands. He was chairman of the Royal Commission on the Housing of the Poor, a question the solution of which medical and sanitary authorities alike are convinced will be one of the greatest steps forward that our civilisation can take. As originator and chairman of the Prince of Wales's Fund for the London hospitals he raised a lasting memorial to the Diamond Jubilee of Queen VICTORIA, and associated that memorial with medicine. The exacting duties of his high station may not allow him as heretofore to take such an active part in works of philanthropy and charity, but we are certain that his interest in such will be as keen as ever. And he may rely that the PRINCE who served a worthy apprenticeship to the throne by endeavouring to follow the lives and assuage the sorrows of the poorest of his subjects will, as KING, always command the deep and personal esteem of the medical profession.

Legislation against National Intemperance.

IT is sometimes said that the members of the medical profession show a want of courage in the expression of their knowledge of the drinking habits of the nation and of the mischief that is done thereby. There may be some grounds for the reproach but not much. Since the days of Dr. R. B. TODD, a generation back, no leader of medical thought has sanctioned a reckless use of alcohol in any form. And not a few of the men in the front rank have spoken with plainness on the subject and have reduced their prescription of alcohol to the lightest forms and the most modest quantities. The insurance offices, acting as much under the advice of their medical officers as in accordance with their own special and costly experience in the matter, make the question of moderation in the use of alcohol a cardinal one, and unhesitatingly either reject altogether proposals from persons unable to show that they are properly restricted in their use of alcohol or attach such conditions to acceptance of their proposals as to mark their belief that the absence of moderation involves, in the majority of cases, a premature claim on the funds of the association. The significance of this fact is great. For there is in the business of life insurance the keenest competition, and no fancy objections would be raised to the acceptance of any reasonable proposals. The charge against medical men that they have been timid in testifying to the injurious effects of

more than a moderate use of alcohol while lay bodies have widely recognised these effects is not without foundation. But the public utterances of PARKES, MURCHISON, GULL, and ANDREW CLARK, among others, laid stress on the harm done by even moderate quantities of alcohol to many persons. Of recent and living authorities we may refer to Sir J. BURDON SANDERSON, Sir HENRY THOMPSON, Sir WILLIAM GAIRDNER, Mr. VICTOR HORSLEY, and Dr. ROBERT HUTCHISON as men of scientific light and leading who have spoken out. The last-mentioned author, in his book on the principles of dietetics, in the course of a general review of the action of alcohol in health and disease, written in a strictly scientific and temperate sense, concludes that alcohol is an unnecessary article of diet in complete health, and quotes the following sentences from Dr. MURCHISON which may or may not be familiar to our readers:—

"1. A man in good health does not require alcohol and is probably better without it. Its occasional use will do him no harm; its habitual use even in moderation may, and often does, induce disease gradually.

2. There are a large number of persons in modern society to whom alcohol even in moderate quantity is a positive poison.

3. In all conditions of the system characterised by weakness of the circulation the daily use of a small quantity of alcohol is likely to be beneficial at least for a time."

It is, we are glad to think, foreign to the disposition of medical men to enter into political controversy on public questions. But in regard to the question of alcohol it is scarcely possible that they should remain altogether silent. The growing number of deaths from alcoholism and the increasing consumption of it by the people, men and women, and especially women, make it incumbent on medical men who have studied the question to place their views clearly before the public. We have received a copy of an address by Dr. WILLIAM CARTER of Liverpool on National Intemperance, who has clearly perceived the necessity for speaking out. Dr. CARTER does not go into any fine questions concerning the slight effects of moderate quantities. He speaks as a leading consulting medical man and a justice of the peace of Liverpool, in which city there is a constant and hard struggle on the part of the authorities with the social conditions that produce degeneration and disease. He probably holds views on the use and abuse of alcohol more severe than those of the majority of medical men who have to deal with the world as they find it, whether their patients are to be found chiefly in comfortable homes or in charitable institutions; but he wisely confines himself to palpable facts. He points out that in nearly every direction preventable disease has been prevented on a large and satisfactory scale since the legislation of the seventies, which divided the kingdom into sanitary districts and authorised the placing of them under the supervision of a medical man whose function it was, and is, to inquire into the existence of disease in his locality with a view to its control and removal. He shows the marked success which has followed the efforts of the State, through its municipalities, to reduce the mortality from almost every one of the great groups of disease which are responsible for the deaths of the people. After the registration system was introduced in 1837 the mortality remained almost stationary till the development of the public health legislation, to which we have referred, when the general mortality began to fall and has progressively fallen. In regard to every great group of disease this fall in mortality holds save in the dietetic group, which is subdivided into three headings—deaths from starvation, deaths from scurvy, and deaths from intemperance. Deaths from starvation have fallen from 18 to 12 per 1,000,000; deaths from scurvy, 1 in 1,000 000, have remained stationary; but with deaths from intemperance the case is quite otherwise—they have risen from 45 per 1 000,000 of those living in the year 1878 to 77 per 1,000 000 in 1897. Dr. CARTER is impatient with such a state of matters and calls for its redress by "legislative or other action." He shows how typhus fever, small-pox, and hydrophobia have been controlled almost to complete disappearance by the effective administration of the law. He maintains that law can do much to control and diminish death from alcohol. One fact with medical bearings he adduces. The magistrates of Liverpool, under the powers of an Act of 1872, determined to curtail the period of sale of alcoholic drinks by one hour on a Saturday night. Dr. CARTER made it his business to carefully collect from every dispensary and from the out-patient department of every hospital the number of cases of surgical injury due to drunken assaults on Saturday nights and Sunday mornings for a certain number of weeks before and after the curtailment of the hours. He has been enabled to show, without a single chance exception at a single institution, an extraordinary diminution since the curtailment of the hours of sale, a fact which not improbably influenced the magistrates to maintain the curtailment in spite of the great pressure that was put upon them to do the reverse. One such fact as this should dispose of most of the nonsense that we hear to the effect that legislation has done all it can to mitigate the preventable disease of alcoholism, which has increased and is increasing, and which keeps up the pauperism of the country in a time of unprecedented prosperity.

It is idle to think that any provision for confirmed drunkards will materially benefit either them or the nation unless efforts are made by the legislature and by society to prevent their being manufactured wholesale. We have shown that many leaders of the profession have viewed the question of our national habits with seriousness. The medical profession throughout the kingdom will be acting in the spirit of the true physician in refusing to be satisfied till legislation does for the mortality from alcoholism what it has done for the mortality from whole groups of other diseases which do not so fatally affect the people. We may appear in our columns of late to have somewhat laboured the temperance question, but we are sure that our readers will not confuse us with the well-meaning but over-zealous advocates of total abstinence. Although in every section and sub-section of human life there will be weaker vessels requiring protection for themselves of which stronger men feel no need, it is, in our view, ridiculous to desire to put men into leading strings because babies cannot walk. Yet no temperance lecturer can be more profoundly convinced than we are ourselves of the terrible mischief that is being

done to our country at the present day by our alcoholic indulgence. This view is, we are certain, shared by the medical profession of the kingdom whose position for using words of caution and remonstrance is unique and who have opportunities of studying the alcohol question at first hand which are denied to temperance lecturers.

Isolation Hospitals.

FOR some weeks past a discussion has been proceeding in our columns as to the value which is to be attached to isolation hospitals in relation to the control of scarlet fever. Those who are associated with these hospitals have not come forward with the alacrity which might have been expected, but possibly they are reserving their efforts for the discussions which, we believe, are very shortly to take place at the Society of Medical Officers of Health and at the Epidemiological Society of London. The subject is one of very great importance and the responsibility of those who endeavour to deal with the problem without a proper appreciation of all the factors involved is enormous. It is for this reason that we have determined to point out some of the issues at stake and some of the fallacies into which Mr. E. D. MARRIOTT of Nottingham, who has taken a prominent part in this controversy, has, in our view, fallen. Had he turned his attention in the direction of reform he would have found us on his side, but when he wishes to deprive the public of the advantages of isolation hospitals we feel constrained to examine his position closely.

In THE LANCET of Dec. 8th, 1900, p. 1661, we contrasted, in a leading article, the modern conception of an isolation hospital with that which obtained in olden days when the nature of infection was less perfectly understood. We referred, too, to a pamphlet written by Mr. MARRIOTT which aimed at condemning *in toto* such institutions owing to the fact that they had failed to "stamp out" scarlet fever. We challenged the writer of the pamphlet to refer us to even the most antiquated memorandum on isolation hospitals issued by the Local Government Board which might afford him some grounds for the "stamping-out" thesis, which he has apparently borrowed from certain enthusiasts of bygone years. In his reply, which we published in THE LANCET of Dec. 15th, 1900, p. 1759, Mr. MARRIOTT was silent upon this point; and, moreover, he apparently changed his ground from a general attack upon isolation hospitals to the more specific case of scarlet fever alone. Mr. MARRIOTT'S contention would appear to be this: that the risk of infection from invaded houses to the rest of the community is not, as we contended it was, lessened by the use of isolation hospitals but is actually increased, and this through the medium of "return" cases. We feel it difficult to take this expression of opinion seriously. Stated in other terms it means that the occurrence of the cases which at times result from patients discharged in an infective condition from a fever hospital more than counterbalances numerically the cases which might be considered as likely to arise were the original cases left in their own homes—in the one- or two-roomed, often overcrowded, dwellings of the poor—during the whole period, some eight weeks, of infectivity. The burden of proof is, of course, with Mr. MARRIOTT, but it may be asked whether a source of infection which is relatively uncontrolled for many weeks is not as likely to be harmful to the public as one which is at once removed to a well-conducted isolation hospital. It is surely admitted by all those who are familiar with hospital administration that a discharged patient may possibly be a source of infection, and hence at some hospitals the friends are warned that there is such risk; but to any well-balanced mind this is hardly a sufficient reason for condemning the whole system. Rather is it a reason for less concentration, and the adoption of such measures as have been found, at Manchester and elsewhere, very materially to reduce the number of "return" cases.

Mr. MARRIOTT will, we trust, forgive us if we question his entire comprehension of the epidemiological problems at issue, and if we ask whether he is not rather confusing notification with isolation. He shows by tables that in certain of our large towns the amount of isolation which has been at present practised has not led to any *demonstrable* decrease in the number of notified cases of scarlet fever and he at once infers that such institutions are worse than useless. But here he is endeavouring to establish a fixed standard for an ever-varying and uncertain quantity; he entirely overlooks the fact that, as pointed out by Dr. A. J. TONKIN in THE LANCET of Dec. 22nd, 1900, p. 1835, certain diseases have their periods of increase and decrease quite irrespectively of the influence of any sanitary measures, and that hence the diminution of such increases is all that can at present be hoped for, unless with a disease such as plague in Glasgow we can, as it were, get round the whole outbreak at once. A parallel might be pictured in the case of a town where, for some reason imperfectly understood, the number of fires increased year by year notwithstanding the fact that the fire-brigade service was yearly more complete. Mr. MARRIOTT would, it seems to us, disestablish the fire engines rather than seek to control the amount of inflammable material in the town. As regards the fall in the fatality-rate of scarlet fever which has undoubtedly taken place for many years past, Mr. MARRIOTT alleges that such fall received a check when isolation became *general*. It is difficult to ascertain when isolation did thus become general, and it is news to us that it is so at the present moment, but Mr. MARRIOTT assumes that it became general in or about 1893. In endeavouring to demonstrate this point he furnishes a table showing the average number of deaths from scarlet fever per 1,000,000 persons living in successive quinquennia from 1861 to 1893, his quinquennia, be it noted, ceasing with the period from 1886 to 1890 when the average was 241 per 1,000,000. For the year 1891 the rate per 1,000,000 was 171; for 1892, 190; and for 1893 it was 235. Here he stops, but we must point out that had he made use of the figures at his disposal—he refers to other rates even for 1899—he would have had to record 149 per 1,000,000 for 1895 and 113 per 1,000,000 for 1898, while for the period 1891–1895 the lowest quinquennial rate on record—i.e., only 182 per 1,000,000—was registered, and this with the increasing use of isolation hospitals. Vital statistics are, Mr. MARRIOTT observes, "the third degree of comparison of unveracity," and when used in this way and

applied to estimate the effects of any given measure upon a wave the initial magnitude of which is unknown and *unknowable*, they are apt to be ludicrously misleading. We leave our readers to determine to what degree we have been just.

We asked on Dec. 8th what Mr. MARRIOTT would do without isolation hospitals in the event of bubonic plague visiting England. Mr. MARRIOTT replies that Dr. J. F. PAYNE in his article on Plague in CLIFFORD ALLBUTT'S "System of Medicine" writes that "under some circumstances the patient might be better isolated in his own house." We quite agree with this; but Mr. MARRIOTT, had he given us the context necessary to convey Dr. PAYNE'S meaning, would have written: "The infected house should be emptied, patients should be removed to a hospital, and the other inmates isolated under observation." In his communication of Dec. 29th Mr. MARRIOTT raises questions as to the varying prevalence of scarlet fever and he apparently maintains that no such variations are recognised. If Mr. MARRIOTT will turn to the last edition of WHITELEGGE'S "Hygiene and Public Health," which is, perhaps, the most widely read text-book on the subject at the present time, he will find on page 288 these words in reference to scarlet fever: "In many districts it rises and falls with almost rhythmic regularity for long series of years, the usual interval between the epidemic maximum being five or six years. ..... In most towns epidemics occur at more or less irregular intervals." It had never "dawned upon me," Mr. MARRIOTT wrote, "that any man who had in view the objects aimed at by the establishment of isolation hospitals would build up an argument founded on the admission that no effort can stay the oncoming of the periodic wave. It is a kind of logic which I find extremely puzzling." Here Mr. MARRIOTT admits that he has not kept himself in touch with modern epidemiology. He will discover many references to this very point in the pages of THE LANCET, and if he will refer to the Public Health section of our last Annus Medicus he will be gratified at finding in regard to plague a candid admission of the position he finds so puzzling. With certain infectious diseases, as with certain foods, there are years of plenty and years of scarcity. What makes for the one or for the other is not as yet apparent, and in the meantime what we seek to bring about by notification and isolation is to reduce the magnitude of the upward wave and hasten the fall of the downward wave; in other words, we endeavour to mitigate or increase the *effects* of nature's laws.

Perforation in Typhoid Fever: The Indications for Surgical Operation.

PROFESSOR OSLER has made for himself such a commanding position among physicians that any article that bears his name is certain to attract wide notice from his professional colleagues. But we make no apology for drawing special attention to the short communication from him which is published in our columns to-day, for it deserves to be very widely read and pondered, not only by those to whom it is especially addressed—the resident officers of hospitals—but by all who undertake the medical care of patients having typhoid fever, and by all operating surgeons. A physician of wide experience and great knowledge like Dr. OSLER does not lightly speak or write on the treatment of typhoid fever; he knows how profound are the problems to be solved, and how great have been the labour, the knowledge, the skill, and the experience which have already been brought to bear upon their solution. Those whose experience is small, and knowledge perhaps less, are often found vaunting some specific for this, that, or the other feature of this terrible disease. Not so the really learned. Dr. OSLER'S special point in his present article is the urgent need for the early recognition of intestinal perforation in the course of typhoid fever. He points out that 25 per cent. of the deaths in this disease are due to perforation of the bowel, and he alleges that in his wards from 30 to 40 per cent. of the cases of perforation have been rescued from death by timely operation. Such a statement from such a source is of the highest moment and it records a result that even the most sanguine did not anticipate when this treatment was first suggested and carried out.

To obtain success certain conditions appear to be necessary. In the first place, the occurrence of the perforation must be recognised *at once*, before the widespread peritonitis has abolished all hope of saving life. In the second place, the local condition must be capable of surgical treatment; extensive infiltration of the bowels or, still worse, considerable sloughing, appears to contra-indicate operation. These conditions cannot be accurately determined before operating, and the surgeon must therefore be prepared to find it impracticable to complete his operation in a certain number of cases. The third condition is such a physical state of the patient as will enable him to stand the strain of the operation. Upon this point it is necessary to remember that the shock of the operation has not proved so fatal as might have been expected, and some desperate cases have weathered the storm. Dr. OSLER himself mentions cases in which "the operation is successful, but the patient dies in the due course of the disease from the intensity of the fever or in a relapse." That is to say, there have been patients who were so desperately ill with the general effects of the fever that they ultimately succumbed to it, but who yet successfully passed through the operation for closure of the perforation. But even more striking than such is the case briefly mentioned by Dr. OSLER of a patient who twice over in an attack of typhoid fever was operated upon for intestinal perforation and on a third occasion had the abdomen opened on the supposition that another perforation had occurred. That any patient in the later weeks of typhoid fever can survive three successive abdominal sections is a proof that the chance of life afforded by operation must not be lightly denied because of the "shock" or other constitutional strain which it will cause. The fourth condition of success is rapid and careful operating. A general anæsthetic can often be dispensed with, injection of eucain with perhaps just a whiff of chloroform being sufficient to prevent pain. Great manipulation of the bowel must be avoided and all procedures should be rapid and careful. In the best cases suture of the bowel so managed as to fold in the edges of the perforation is the proper procedure; in

a small number of the cases the bowel is too extensively diseased to admit of this and an enterectomy must be effected. The operator must be prepared for either course and must make up his mind promptly.

Of all these conditions the time between the perforation and the operation is the most important. When general peritonitis is well established operative treatment is practically quite hopeless. The problem is how to recognise and deal with the perforation directly after its occurrence without waiting. For this to be possible the diagnosis must be made quite early, and it is to this point that the attention of our readers is specially attracted. A sudden severe pain in the abdomen is the most constant sign, but perforation is not the only cause of such pain. A distinct change in the condition of the abdomen—rigidity, immobility during respiration, fulness, a markedly tympanitic area, or the abolition of liver dulness are all points to be carefully investigated. A sudden fall of temperature or rise in the pulse-rate is also significant. It is not by relying upon any one of these signs, however, that a diagnosis will be arrived at, but rather by the ability to appreciate that a sudden change in the local and general condition has taken place. If diagnosis is postponed until the abdomen is distended and motionless and the patient profoundly collapsed, the time for successful surgical aid will have passed by. Too much stress cannot be laid upon the urgent importance and great difficulty of early diagnosis. It will only be achieved by those in attendance keeping a very careful watch upon all the local and general symptoms. The problem presents itself in many forms in medicine and surgery. In penetrating wounds and contusions of the abdomen it is often extremely difficult to determine whether perforation of the bowel has occurred or not. How often, too, are the symptoms of a perforated appendix most ambiguous, and the golden opportunity for surgical treatment is lost! We feel sure that Dr. OSLER'S appeal for a more minute and careful observation and record of all such cases will be generally welcomed, and we hope that it will be attended with great success.

Annotations.

"Ne quid nimis."

THE ROYAL COMMISSION ON THE BEER-POISONING EPIDEMIC.

THE Royal Commission which was appointed to inquire into the "recent exceptional sickness and death attributable to poisoning by arsenic in beer" met for the first time on Feb. 5th, under the presidency of Lord Kelvin, to consider the course of procedure. We believe that a preliminary course of procedure was decided upon, and we hope that the Commissioners have elected to direct their attention in the first instance exclusively to the question of poisonous beer. As we have pointed out, "exceptional sickness and death" have been traced indubitably to arsenic in beer, and this matter needs no further discussion. We hope the Commissioners will at once decide upon a recommendation that legislative measures be immediately taken to stop effectually the introduction of arsenic into beer. The consideration of the "pure beer" question is quite secondary to this, although we must admit that in view of recent disclosures this question may well be re-opened. Further, it seems to us that the terms of reference are so wide as practically to fix upon the Commissioners the responsibility of deciding the question as to what steps should be taken to secure the absolute freedom from arsenic of all food products, and what limitations in regard to the quantity of arsenic should be laid down in other products, in fabrics, for example, carpets, dress materials, wall-papers, and so on. The epidemic following upon beer-poisoning has opened an enormous field for inquiry, and we doubt not that much valuable evidence will be given before the Commission on the whole general question of the possibility of arsenic occurring, from a just traceable quantity up to an estimable amount, in food and food products and other articles of every-day use. It is no longer a Royal Commission on beer-poisoning; it is a Royal Commission to inquire into the presence of arsenic in countless directions. We maintain that so far as the inquiry relates to beer-poisoning the materials are already to hand which should enable legislation to be soon set afoot in the form of a short Bill to suppress the possibility of arsenic occurring in beer; and in view of the deaths and sickness that have been caused we consider that a remedy more rapid than a Royal Commission might have been found. The question of the presence of arsenic in other food materials must needs involve a prolonged inquiry, but there is here no pressing necessity, as in the case of the beer-poisoning epidemic, for immediate legislative measures. Clearly, if the Royal Commission decide to conduct an investigation into the possible presence of arsenic in, we had almost said, everything, we may have to wait a very long time before any definite measures are adopted effectually to stop the introduction of arsenic into beer.

THE PHARMACOPŒIA AS A LEGAL STANDARD.

IN commenting upon a case in our issue of Jan. 19th which related to the sale of mercurial ointment considerably below the strength of the formula laid down in the British Pharmacopœia, we remarked that there is a good deal to be said in favour of the view that where a thing is not sold in accordance with the standard of the British Pharmacopœia it ought to be so labeled. This is exactly the view since presented in the judgment given in a precisely similar case in the King's Bench Division of the High Court. Here, again, the drug sold was mercurial ointment which proved to contain 12·5 per cent. of mercury instead of 48·5 per cent. as laid down by the British Pharmacopœia. The case had been stated by the magistrates sitting at Skipton in Yorkshire, and it raised the question of whether the decision of the magistrates upon an information under the Sale of Food and Drugs Act, 1875, was correct. It was contended that the ointment supplied not being in accordance with the standard of the British Pharmacopœia was not of the nature, substance, and quality demanded within the meaning of the statute. The appeal was dismissed, for their lordships (Bruce and Phillimore) held that as the appellant was asked for mercurial ointment he should have sold the drug as prescribed in the British Pharmacopœia; or if he was going to sell ointment in which the mercury was only about a quarter of the standard strength, which he in fact did, he should, if he sold such a drug at all, have explained that he was selling a weaker or diluted drug and have so named it. Their lordships further pointed out that what the appellant did attempt to prove was that there were two commercial standards of wide difference, "a thing in itself unreasonable, while he said he kept both standards in his shop and sold one standard or the other

according as customers did or did not bring a prescription from a medical man. He might almost as well keep two weights or two measures." They were of opinion, therefore, that the cases which they had quoted established the fact that if a drug was to be found in the British Pharmacopœia, and that drug was asked for, that drug must be supplied, and if it was not sold with the ingredients in the proportions prescribed by the British Pharmacopœia there was at least *prima facie* evidence that what was sold was not of the nature, substance, and quality demanded. This ruling seems to us clearly to regard the British Pharmacopœia as a definite legal standard for drugs, and thus to settle the contention that has been going on for some time as to whether it was legal to refer the strength or standardisation of drugs to the British Pharmacopœia under the Sale of Food and Drugs Act. Many pharmacists hold that it is, while some analysts think that it is not. This important decision of the High Court practically regards the British Pharmacopœia as an authority on the standard and strength of drugs.

THE DEATH FROM PLAGUE IN CONSTANTINOPLE.

ON Jan. 7th a death from plague occurred in the Clinical Hospital attached to the School of Medicine in Stamboul. The patient, as has already been recorded in our columns, was *caikjee*, or boatman, to a custom-house official who lives at Beicos, on the Asiatic side of the Bosphorus, some 12 miles from Constantinople itself. The man fell ill about 15 days before his death; he was seen by a medical man at Beicos, who diagnosed the case as one of influenza complicated with pneumonia. Influenza, it may be stated, was at that time seriously epidemic in this city and its neighbourhood. As he became worse his brother was telegraphed for and on Jan. 4th the latter removed the patient to Selimieh, a suburb of Scutari—the town which faces Constantinople on the Asiatic side of the Bosphorus. Here he lay for three days and nights, occupying a room over a café frequented by boatmen. On Monday, Jan. 7th, he was rowed across in a *caik* to Stamboul and carried up to the Clinical Hospital. He died almost immediately after being admitted. The nature of the case had not been recognised by the hospital authorities before death, but by a fortunate chance the patient had been seen during the course of his removal from Scutari to Stamboul by a physician who had some experience of plague. The latter at once recognised the nature of the case and reported it to the municipality, who were enabled to take action before the body was buried. Professor Nicolle, the director of the Bacteriological Institute of Constantinople, was summoned. He found a bubo in one groin of the cadaver and the bubo contained an enormous quantity of bacilli, which possessed all the morphological and cultural characters of plague bacilli. The cultures when inoculated into rabbits caused death in 48 hours. Whence the infection came in this case has not been proved, but it is more than possible that the case was in some way connected with the recent recrudescence of plague in Smyrna. The man had friends in Smyrna and had visited that town some three months before his death. It is possible that he had received letters or parcels from Smyrna which had in some way conveyed the infection to him. For the measures taken in and around Constantinople in consequence of this death the municipality was mainly responsible. The Ottoman Board of Health was in a position only to give advice and to make suggestions, but as the highest sanitary authority in the country its advice was asked for, given, and acted upon. Two special meetings of the Board were held on Jan. 9th and Jan. 11th, and a number of measures tending to allay panic, and particularly to ensure that the authorities should have early knowledge of suspicious cases or of any unusual phenomena in the rat world, were suggested and carried out. A small committee of four medical men, two nominated by the Sultan and two by the Board, was formed, to hold itself in readiness to investigate any doubtful case of disease or death, whether in man or among rats. Fortunately their services have not been required, as nothing has occurred since Jan. 7th to raise the suspicion that the infection of plague still exists in or near Constantinople. The only quarantine measure imposed by the Board of Health upon shipping was a medical visit with disinfection on arrivals from Constantinople in other Turkish ports. The neighbouring countries were stricter, and Russia, Roumania, Bulgaria, Greece, and Egypt all imposed a quarantine of 10 days upon arrivals from Constantinople. As this action on the part of Russia was a direct infringement of the Venice Convention which was accepted by that country attention has been drawn in the proper quarter to this—the second occasion within four months on which Russia has broken the convention. At the moment of writing all quarantine measures in other countries against Constantinople have been withdrawn.

THE ROUTE AT THE QUEEN'S FUNERAL.

IT speaks well for the arrangements that were made on Saturday last, Feb. 2nd, to keep the route for the passage of the Queen's funeral *cortège*, that although vast crowds assembled in the metropolis to pay their last sad and solemn homage to the memory of a dearly beloved ruler, few accidents occurred that were of a serious nature. Deep love and high respect for Queen Victoria undoubtedly played no little part in the order which prevailed. Hooliganism was absent, for its exemplars, being no fools, felt that anything in the nature of rowdyism would have met with a hostile reception on the part of all men. The most serious accident which has come to our notice happened to a police-constable who was kicked in the lumbar region by a troop-horse. The man was taken to St. Mary's Hospital and is now progressing favourably. A man was kicked severely in the abdomen by a troop-horse in Edgware-road, of whose fate we have had no news. Some 30 cases of faintness and fits were also treated at St. Mary's Hospital, while at St. George's Hospital there were several cases of simple fracture. At Westminster Hospital a few cases of fainting were treated. Some two dozen of the injuries treated were the result of falling from trees, eight of the sufferers being females. The medical arrangements along the line of route were in charge of Surgeon-Lieutenant-Colonel J. E. Squire, V.M.S.C., who was assisted by Surgeon-Major Matthews, V.M.S.C., and Captain L. Way, R.A.M.C., together with about 20 officers and 400 men of the Volunteer Medical Staff Corps.

SCALDS OF THE PHARYNX AND LARYNX.

IN the *Deutsche Medicinische Wochenschrift* of Jan. 31st Dr. E. Schmidt of Britz reports a case in which a boy, three years of age, attempted to drink from the spout of a tea-kettle full of boiling water. The parents were unable to say whether any of the water had been swallowed or whether the symptoms were due to the steam alone. When the immediate pain and terror had subsided the child was able to drink without apparent suffering, and the parents were hopeful that no harm had been done, but during the night difficulty of breathing set in and the child was admitted into hospital next day. There were then hardly any perceptible signs of injury, as the lips, tongue, and pharynx were perfectly normal, and there was nowhere any marked redness of the mucous membrane, but there were dyspnœa with rapid breathing and some pain in swallowing. Laryngoscopic examination was impossible on

account of the child's restlessness. In the afternoon there was a change for the worse, and subcutaneous emphysema starting from the throat spread to the body, neck, and cheeks. Tracheotomy was performed in the evening. The child died next day from cardiac debility and pneumonia. The interest of Dr. Schmidt's article consists not in the clinical phenomena but in his statement that such an accident is hardly known in any country except England. In Germany, he says, such an occurrence is never met with, or at least is excessively rare. Four cases which have been recorded in German literature—namely, in the *Journal für Kinderkrankheiten* for 1860 and 1867—relate to children into whose mouths hot fluid was poured as they were lying down. On the other hand, in England, in St. Thomas's Hospital alone from 1872 to 1893 there were 78 cases. Dr. Schmidt attributes these accidents to the universal practice of drinking tea among all classes in England and quotes from Mackenzie on "Diseases of the Larynx" to the effect that children are commonly allowed to drink from the spout of the teapot and they afterwards, not understanding the danger, attempt to do the same with the tea-kettle.

ASTHENIC BULBAR PARALYSIS AND ITS PATHOLOGY.

Professor J. Déjerine and Dr. R. Thomas have published in the *Revue Neurologique* of Jan. 15th last a valuable communication on the subject of asthenic bulbar paralysis, which gives, apparently for the first time, some definite account of the pathology of an affection which hitherto[1] had been supposed to be a disease without discoverable morbid changes in the cerebral nervous system. The first clinical description of the disease was published by Wilks in the Guy's Hospital Reports for 1877 and in the following year Erb of Heidelberg gave a detailed description of a case. A few cases have been described clinically since then and the results of necropsies made by Oppenheim, Strümpell, Jolly, and Sinkler have hitherto given negative results. Widal and Marinesco mention briefly that chromatolytic changes were met with in the bulbar nuclei of the cranial nerves in one case examined by them, but state nothing regarding the cerebral cortex, pyramidal tracts, or muscles. Glockner reports similar changes in the dorsal nucleus of the vagus nerve in one case, while the other cranial nerve nuclei showed no changes. He also records a fatty degeneration in the muscles of the tongue. The case recorded by Professor Déjerine and Dr. Thomas is as follows. A woman, aged 58 years, of good heredity, married, had repeatedly suffered from headache and vertigo since the menopause. Hearing was subsequently dulled in both ears and speech was slightly embarrassed. On admission to hospital there was some trouble in swallowing, and she suffered also from dental neuralgia. There was slight right sided facial paralysis and speech was nasal in tone. Laryngoscopic examination showed a paresis of the adductors of the vocal cords. Her mental condition was normal and the cutaneous and deep reflexes were retained. She frequently suffered from marked somnolence. She now grew progressively weaker, was unable to masticate or to swallow food, the reflexes of all four limbs grew exaggerated, and she died from an intercurrent attack of pneumonia after having been in hospital nearly two years. At the necropsy the nervous system (cerebrum, spinal cord, meninges, and cranial nerves) appeared normal to the naked eye. Histological examination, however, revealed the following changes. The cerebral cortex, the ascending frontal convolution, showed irregularly distributed changes—viz., a very marked multiplication of neuroglia cells and a considerable diminution or rarefaction of nerve cells. The neuroglia overgrowth was particularly conspicuous in the molecular layer and consisted of irregularly stellate and rounded cells. The apical expansions and protoplasmic terminals of the cortical cells had disappeared and the cell-bodies when they still persisted were reduced to rounded masses or to nuclei clothed with a thin layer of protoplasm. The capillaries were numerous but their coats were unaltered, and the large blood-vessels also appeared normal and free from appearances suggesting inflammatory reaction. In intervening cortical areas relatively intact nerve-cells were present. The nerve-fibres both of the tangential and projection systems appeared normal. No lesions could be found in the internal capsules or basal ganglia. The bulbo-spinal nuclei appeared quite normal. The muscles of the tongue and larynx showed fatty degeneration and the nerves supplying these were similarly affected. Scattered degenerations were found among the pyramidal nerve-fibres in their course through the bulb. While definite lesions were thus met with the cause remains yet obscure.

[1] Sinkler: THE LANCET, Oct. 21st, 1899, p. 1110.

WOOD-SPIRIT IN WINES AND SPIRITS.

IT would appear that methyl-alcohol, the chief alcohol of wood-spirit—so-called because it occurs in the products of the distillation of wood—is produced during the process of fermentation of fruit sugars. Accordingly, by means of a beautiful and delicate test, wood-spirit has been found in important though small quantity in wines and in the spirit distilled from wine—namely, brandy. This observation may be of the utmost importance in aiding the discrimination by chemical means of genuine grape-derived spirit from that distilled from grain. Odd as it may seem, methyl-alcohol is not found in spirit obtained by the fermentation of cane sugar, nor can it be traced in any grain spirit, as in whisky or in rum, or in commercial spirits of wine. Brandies, however, even of the low grade kind and obtained from partially spent grapes or marc, gave distinct evidence of the presence of methyl-alcohol. It is premature to state positively that this test will furnish a means of distinguishing absolutely genuine from "fabricated" wines, or grain spirit from grape spirit, but it is to be hoped that this line of investigation will be further pursued. Suffice it to say that the test which has been regarded to identify the wood-spirit is based upon the action of resorcin on formaldehyde which is produced by oxidising the methyl-alcohol in a special manner. It is interesting to add that there is no reason to believe that pure and matured methyl-alcohol is more injurious than ethyl-alcohol. The amount, at any rate, in wines or spirits must be small.

THE INVESTIGATION AT BELLEVUE HOSPITAL, NEW YORK CITY.

THE investigation which has been undertaken at Bellevue Hospital owing to the charges made against its management has revealed the following facts. During the year 1900 24 307 patients were treated in Bellevue. Of these patients 1720 died, or about 7 per cent. of the entire number treated. This percentage really indicated a larger death-rate than ordinarily could be charged against the hospital since it receives a large number of patients from other hospitals in a moribund condition upon their arrival. The daily census of Bellevue for the year 1899 shows that the average number of patients under treatment was 690 per day. In the year 1900 the average number of patients treated per day was 733. In the year 1899 4031 patients were treated in the alcoholic ward; in the year 1900 3753 patients were treated in this ward. In the male alcoholic ward in 1899 there were 146 deaths; in 1900 there were 160 deaths. The total number of deaths in the female alcoholic ward for these two years was 81, 46 in 1899 and 35 in 1900. The deaths in the male alcoholic ward in 1899 amounted to 3·5 per cent. of the

number of patients treated; in 1900 it was 4·26 per cent. The number of deaths in the female alcoholic ward for the year 1899 was 2·75 per cent. of the patients treated; for 1900 it was 2·41 per cent. In 1899, 1218 patients were admitted to the pavilion for the male insane; of these patients 29 died. To this same ward in 1900 there were admitted 1265 patients, while the number of deaths was 40. The number admitted to the pavilion for the female insane in 1899 was 1049, of which number 17 died, making the death-rate 1·62 per cent. In 1900, 1160 patients were treated n this ward and 32 died, making the death-rate 2·76 per cent. Those responsible for the management of the institution claim that it has been conducted well and that the records of the wards compare favourably with those of any hospital in the city. The figures certainly bear out this claim, but we trust that the investigation will be thorough.

THE SANITARY INSTITUTE.

AT a special meeting of the Council of the Sanitary Institute, Earl Fortescue, Vice-President, in the chair, an address to the King, and signed by H.R.H. the Duke of Cambridge as President, on the death of Her Majesty Queen Victoria was adopted, in which the following words occur:—

"Among the many noble attributes that endeared the Queen to the hearts of her people none was more potent than her widespread sympathy with all classes of her subjects, and in no branch was this more markedly shown during her long reign than in the interest which our late beloved Queen and several members of her Royal house specially showed in the adoption and development of measures for the improvement of the health of the people, and of the conditions under which they, and especially the poorer classes of them, live."

All the medical profession will echo the sentiment thus expressed.

"THE LOGIC OF A CORONER."

WITH reference to an annotation under the above heading which appeared in our issue of Jan. 12th, p. 118, we see that Mr. P. J. O'Keefe wrote to the Registrar-General upon the question of the inclusion of the fracture of the leg as a secondary cause of death in the case of Mary Anne Teresa Ronchetti. The Registrar-General replied, "As you ask for my opinion I may say that your certificate appears to be quite in order and to be in accordance with the instructions issued from this office." This is what we should have expected. Another point of interest came up before the same coroner at an inquest held at Crosby on Jan. 7th to inquire into the death of Mary Jane Woosey, aged 75 years, who died on Jan. 3rd. Deceased had fallen downstairs on Nov. 30th, 1900, and Dr. W. G. Little, who was called in, attended her up to the time of her death. After death he refused to give a certificate and apparently—for the newspaper report supplied to us is not very clear—the case was reported to the coroner who sent his officer or the police to obtain information as to the cause of death from Dr. Little. This information Dr. Little refused to give except, as he stated to the coroner in a letter, "upon summons in a regularly constituted court and upon oath." At the inquest the coroner is reported as saying that Dr. Little was bound to give a certificate. Another passage of the report runs as follows: "In reply to the inspector the coroner said he was perfectly justified in sending his men to medical practitioners to collect information for this court. If the doctors refused the information then all that the inspector had to do was to report it to him and he would know how to deal with the matter." Dr. Little's argument was that as death had occurred within six weeks of the accident he could not give a certificate. The length of time has, of course, nothing to do directly with the question of whether a certificate should or should not be given. But the chief point at issue seems to us to be whether in case of a doubtful death a medical man is justified in giving evidence, naturally not on oath, to a policeman concerning the cause of death. The coroner was of opinion that the medical man was not justified in refusing to do so. The Coroners Act simply states that "When a coroner is informed that the dead body of a person is lying within his jurisdiction and there is reasonable cause to suspect that such person has died either a violent or an unnatural death ..... the coroner ..... shall as soon as practicable issue his warrant for summoning ..... good and lawful men ..... to inquire as jurors touching the death of such person as aforesaid." It is quite clear from this that the coroner must have some information to go upon. But it is equally clear that medical evidence ought to be given directly and upon oath by a medical man, and not be admitted second-hand through the medium of a policeman or a coroner's officer, who cannot know what is the essential part of the testimony he is giving and who is liable to make lamentable omissions or additions and no less lamentable deductions.

ORGANO-THERAPEUTICS IN MENTAL DISEASE.

DR. C. C. EASTERBROOK of the Royal Asylum, Morningside, Edinburgh, has published a valuable contribution to our knowledge of organo-therapeutics in mental disease. He points out that the "immediate nutrition of any organ is of a two-fold nature, hæmic and nervous, and depends upon a proper supply of blood pabulum and of trophic nerve impulses." The brain cortex directly dominates the nutrition of the efferent portion of the central nervous system and thereby it indirectly controls the nutrition of the bodily organs. Hence from prolonged worry or mental strain (cortical nervous disturbance) will follow a furred tongue, anorexia, constipation, and palpitation (peripheral bodily disturbances of nutrition), and the patient will run down in physical condition. Since the discovery of Brown-Séquard of "internal secretions," and of G. R. Murray and Victor Horsley of the specific action of the thyroid extract in myxœdema many therapeutic attempts have been made in the direction of organo-therapeutics, and in recent years this treatment has been extended to mental diseases. A summary of Dr. Easterbrook's results has already appeared in THE LANCET,[1] in the Proceedings of the Section of Pyschology at the meeting of the British Medical Association at Ipswich, 1900. The results of treatment vary according to the published statistics of various writers. Mabon and Babcock have given a summary of over 1000 cases collected from literature and from unpublished cases in American asylums. Collectively the cases amount to 1032, of which 16·8 per cent. are reported as recovered, 24 per cent. as improved, and 59·2 per cent. as unimproved. Dr. Easterbrook states that "many of the recoveries reported were not true tests in that thyroid was employed when there was still a good chance of recovery by the ordinary methods of treatment." In Dr. Easterbrook's series of 130 cases of insanity treated with thyroid extract all the patients were suffering from insanity which at the time was stationary or chronic or regarded as incurable. The results were, on the whole, not favourable. Amongst the symptoms noticed to follow were loss of weight, increased bodily metabolism, quickening of the pulse, phosphaturia, and general cerebral stimulation. The results with women were more striking as regards recovery than with men, and it is concluded that "the thyroid treatment of insanity is more efficacious in women than in men," this being perhaps owing to the fact

[1] THE LANCET, August 25th, 1900, p. 610.

that the thyroid gland is functionally more active in women than in men and that it enlarges during menstruation and pregnancy. The best all-round results were obtained in the insanities connected with child-bearing. In *folie circulaire* the thyroid treatment was found to be useful in aborting the maniacal attacks. As regards the *modus operandi* of the drug it is thought that thyroid probably acts by freely stimulating metabolism and ridding the economy of transition and toxic products. Other substances—e.g., thymus, ovarian extract, orchitic extract, and the like—have similar effects, but the thyroid substance surpasses them in these respects.

CHILDREN IN THE REIGN OF QUEEN VICTORIA.

NOT last among those who honour the memory of our late beloved Queen should be the place of her children subjects. Her long reign was rich in measures devised for their welfare and protection. Until it began practically nothing had been attempted for their good. Trade practice was harsh and unscrupulous without restraint, and public opinion was ignorant or indifferent. Even the law was blindly callous in its rigour, so that we are amazed to find terrible penalties recorded against the petty thefts of mere children. Every measure on the statute-book which is intended to protect the rights of children has come into being within the Victorian era. Factory children, children employed in mines, in brickfields, in chimneys, in agricultural gangs, on canals, on the high seas, pauper children, street beggars and hawkers, acrobats, children in pantomimes, criminal children, all found in their Queen a friend as ready as powerful to help them. The last great act of this series and the crown of her endeavours on behalf of suffering childhood was the comprehensive measure passed in 1889. It grappled with two evils—cruelty practised upon children under whatever conditions, and the corruption of their morals. So great an assault upon the enemies of childhood might well succeed the process of sap and mine by which the same foes had been steadily weakened during 50 years. Its success has been its justification, though not its only one. There are proofs to show that the operation of this Act has accomplished much not only for the welfare of children but for the reformation and happiness of their parents also. It has brought into the dreamy indefinite ethics of the late nineteenth century something of "grit" and practical resolution. The national foot has gone down on abuses in our very homes because they were scandalous abuses which no so-called "liberty of the subject" could excuse. Would that we had more of this righteous determination in dealing with other strongholds of evil practice. With time, and light, and honest minds we are not without hope of further great results. For what we have recorded a liberal share of thanks must be assigned to a Sovereign who all her lifetime strove to do her duty to her country and to her kind.

IMMUNITY AND PROTECTIVE INOCULATION.

IN an address delivered at the annual meeting of the Texas Academy of Science Dr. H. W. Harper gave an interesting account of the various steps which had led up to our present knowledge of immunity and protective inoculation. He recapitulated the facts which led Jenner to his discovery of vaccination against small-pox, and then proceeded to discuss the parallelism which subsists between the phenomena of fermentation, infection, and immunity. His expositions on the chemical facts which have been ascertained as regards the nature of fermentation were very instructive, as also were his remarks on the chemical structure of certain ptomaines and leucomaines. The formulæ given in the address are too complicated to reproduce here. He next referred to the discovery of substances in the blood serum of animals immunised against diphtheria and tetanus which are able specifically to protect other animals against the toxins of these diseases—substances now known as antitoxins—and maintained that it has been shown by different observers that toxins were rendered innocuous by means of antitoxins through a purely chemical process in which biological processes had no share. Dr. Harper then went on to argue that the theories advanced by Pasteur, Metchnikoff, and others are insufficient to explain actual facts. He considered that the existing known conditions of immunity might roughly be divided into two groups—biological and chemical—and the explanations of their occurrence must follow this grouping and must be based on biological and chemical grounds. He believed that in the ultimate analysis the biological explanation will rapidly pass from the body as a whole to its respective organs and their respective cells to the nucleated cells and finally to the origin of the nucleus. His concluding remarks are a little difficult to follow. It is evident that he considers the problem of immunity to be a bio-chemical one, but long and patient investigation will be necessary before the chemical changes taking place between the toxins and antitoxins are fully understood and before the relative importance of the biological and chemical processes can be completely estimated.

UNNECESSARY RISKS IN WAR.

A COMPANY commander serving with his regiment at the seat of war and writing from the Transvaal sends a well-considered and common-sense communication to the *Times* of Feb. 2nd in which he refers to the carrying away of wounded men from the fighting line and the unnecessary risk of life to which this practice frequently gives rise. He is careful, of course, to guard himself against being understood to urge that wounded men should be left to take care of themselves, but he points out how frequently it happens that the natural desire to get a wounded man out of action may not turn out to be the best and most desirable thing to do for the man himself and how it may expose those who do so, or attempt to do so, to unnecessary risk. As far as the wounded man is concerned the movement—as in the case of wounds of the trunk of the body—may be actually injurious to him and in some instances take him further away from skilled surgical aid, for, according to the experience of the company commander, "he is more likely to find a doctor in the fighting line than behind it." Many instances are also cited in which those carrying away wounded soldiers from positions where they might have fared well have attracted the enemy's fire and been killed or wounded. He believes that in the aggregate the casualties occasioned in this way are considerable. "I am, I trust," he writes, "as humane as most people, but also somewhat utilitarian (we are not very utilitarian in the British Army as a rule), and on one occasion, knowing that we were going in for a stiff fight, I warned my company that we were not going in as stretcher-bearers, but to fight, and that no man was to leave his duty for the purpose of carrying away me or any other wounded man. We would want every available rifle in the firing line, for we were going in, I said, to win if we could (we did as it happened); when that business was concluded those of us who might be wounded could be seen to. I have heard of others giving the same order." We consider the company commander to be perfectly right. In every big engagement these attempts to rescue and remove wounded men occur as a matter of natural impulse and are usually prompted by the noblest motives, although this may not be invariably the case. But such attempts are not and, under the circumstances, cannot be

expected to be, well-considered beforehand, nor are they always in the best interest of the wounded themselves. The difficulty, however, is to lay down any rules of guidance or line of action to be followed. All that can be said is that each action must be decided upon on its merits and after a rapid survey of the situation. In ordinary European warfare the present bearer column system is probably the best, not only for systematically stripping a battle-field of its wounded, but for preventing any men from falling out from the fighting line under the pretext of helping a wounded comrade. In the case of South Africa, however, the conditions are either very or altogether different from those of European wars. There is sometimes one slender satisfaction in hearing of wounded men having been left for hours upon the battle-field. It is that in certain cases—those of abdominal wounds, for example—the absence of all movement, and the deprivation of fluid nourishment for the time being, offer the best chances of recovery, because the best obtainable state of physiological rest during the earliest stages of reparative process is thus secured.

TYPHUS FEVER IN MANCHESTER.

TYPHUS fever, a disease which arises principally under circumstances of filth, overcrowding, and destitution, is, owing to improved sanitary conditions, yearly becoming more rare in Great Britain, the last recorded outbreak being that at Sheffield in 1890. The *Manchester Evening News* of Feb. 4th states that, according to a report by Dr. James Niven, a somewhat serious outbreak exists in Manchester. On Dec. 31st, 1900, two young women were admitted into Ancoats Hospital suffering from enteric fever. On Jan. 5th, 1901, two other girls were admitted, the one suffering from enteric fever and the other from typhus fever. On Jan. 8th two more girls, both suffering from typhus fever, were admitted. All these girls had worked at the same place of business as sorters of small rags. It contained two rooms, the one set apart for the sorting of woollen rags and the other for the sorting of cotton rags. All the patients attacked were employed in the woollen rag room—namely, seven in all. The office-boy was also attacked and up to the date of Dr. Niven's report three persons had died. All the girls came from very poor homes, but careful investigation has hitherto been unable to account for the source of the disease. One patient, who lives in I—— street, Ancoats, apparently infected seven other persons, and on Jan. 22nd Dr. Niven and Dr. H. Coates visited her home, but were unable to get in. Entrance was accordingly forcibly effected and the father and two children were found in bed all suffering from typhus fever and too ill to do anything. In addition the mother had already caught the disease, as had also a woman who nursed her, while two children living next door but one to the house were removed to the hospital.

THE FOOD AND DRUGS ACT IN MANCHESTER

ACCORDING to the report of the public analyst appointed for the city of Manchester the total number of samples analysed during the quarter ending Dec. 31st, 1900, was 432, out of which 52 proved to be adulterated. Amongst the noteworthy adulterations was that of spirits to an extent which was at first unaccountably uniform. It subsequently appeared that in two cases this uniformity of water dilution was due to the use of a defective instrument by the publican when reducing his spirits to a certain strength with water. More interest, however, attaches to the report on this occasion on account of the results given of the analyses of a number of samples of arsenical beer. Apart from the arsenic the percentage of adulterated samples was quite low. It is, of course, now well known that the arsenic was due to impure glucose. But Mr. Estcourt points out that besides the firm already publicly incriminated, so far there are at least two other manufacturers, according to his information, who have delivered glucose contaminated with arsenic to brewers in other parts of Lancashire. In regard to the small quantities of arsenic found in beer (ranging from one-tenth to one two-hundredth of a grain of arsenious acid per gallon) he is inclined to think that this may be due to the malt used. Subsequently he found malt on the market used by some brewers which, apart from glucose altogether, would pollute the beer to the extent of one-tenth of a grain of arsenious acid per gallon. This contamination of malt is traced to the fumes arising from fuel containing arsenic used in the drying process. Thus a beer brewed from malt and hops exclusively will not necessarily be pure. As we have said before, the provisions of the Food and Drugs Act seem sufficient to insure the sale of beer free from arsenic and other contaminations. If the Acts are carefully put into force and public analysts will keep a sharp look-out for possible impurities careless brewers will have to mend their ways.

THE following appointments have recently been made at the Jenner Institute of Preventive Medicine. Dr. S. G. Hedin, of the University of Lund, Sweden, has been appointed head of the department of pathological chemistry; Mr. J. Beresford Leathes, Lecturer in Physiology at St. Thomas's Hospital Medical School, assistant in the same department; and Mr. W. J. Young, of Owens College, Manchester, assistant in the chemical department. Dr. A. Moore, Dr. G. Petrie, and Dr. A. McKenzie have been elected to fill the three research studentships, the last-named gentleman being appointed to the Grocers' Company Research Studentship of the Jenner Institute.

THE death is announced, at the age of 70 years, of Mr. John Cordy Jeaffreson. Mr. Jeaffreson was the son of a medical man, the late William Jeaffreson, F.R.C.S., and was married to the daughter of another medical man, Mr. William Eccles, F.R.C.S. Himself a barrister he never practised but devoted himself to writing and to historical research. He was an expert in ancient handwriting and worked under the Commissioners on Historical Documents. Among his best known works were a novel entitled, "Not Dead Yet," and "A Book about Doctors."

A MEETING of the Liverpool School of Tropical Medicine will be held in the Town-hall, Liverpool, on Tuesday next, Feb. 12th, at 2 o'clock P.M., to consider the subject of Health and Sanitation in West Africa and the Tropics, in the light of the researches of the three malaria expeditions of the school. The meeting will be addressed by Sir William Church, Bart., President of the Royal College of Physicians of London, and others. The chair will be taken by the Lord Mayor of Liverpool.

THE governors of the Italian Hospital, Queen-square, W.C., have forwarded the following resolution to His Majesty the King: "That the governors and staff of the Italian Hospital desire to record their profound sorrow at the death of Her Most Gracious Majesty the Queen, and to humbly tender their condolence to His Majesty the King and the Royal Family on the loss of one beloved by the world and whose memory will be revered in many lands."

THE Festival Dinner of the Royal Medical Benevolent College, which was fixed for Tuesday, April 16th, has been adjourned until Tuesday, July 9th. The chair will be taken by the Earl of Rosebery, K.G., the President of the College. Any friends of the institution desiring to act as stewards or wishing to be present on that occasion should intimate their

wishes to the Secretary, at the office of the College, 37, Soho-square, W.

THE Hunterian Oration of the Hunterian Society will be delivered by Mr. John Poland on Feb. 13th, at 8.30 P.M., in the London Institution. The subject will be: "A Retrospect of Surgery during the Past Century." The annual dinner of the society has been postponed to March 15th.

AT a meeting of the British Balneological and Climatological Society, held on Wednesday, Jan. 30th, the President, Dr. Bagshawe (St. Leonards), referred to the death of the late Queen Victoria, and moved an address of sympathy with His Majesty King Edward VII. which was unanimously passed.

MANY members of our profession, and especially members of the Edinburgh University Club, will be very sorry to learn of the death of Dr. Leslie Ogilvie, which took place on Saturday evening, Feb. 2nd. We hope next week to publish an obituary notice.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

V.[1]

SYSTEMS OF TREATMENT; FADS AND FADDISTS.

EVERY physician tends after some years of experience to settle down into certain stereotyped methods of treatment of his own, and it is safe to say that these are never exactly the same for any two physicians. From this it is manifest that great latitude is allowed in treatment. This is due partly to the fact that the same malady may often be cured by many different means, but chiefly it is the result of the chaotic state of therapeutics. Of all the inexact sciences therapeutics is probably at the present day the most inexact and the furthest from reduction to a rigid system; and this is not because of any want of enthusiasm in those who devote themselves to it, but from the inherent difficulties it presents. As a consequence opportunity is offered for the introduction of a multitude of methods and of endless cranks and fads. We are like children wandering in the dark seeking for the light, and it is often impossible when a new treatment is advanced to say whether it will prove a mere will-o'-the-wisp or a true guide. Our ignorance does not permit us at once to silence the originator of what may ultimately prove a valueless—it may even be harmful—treatment; we are compelled in fairness to give him a hearing, and some of us, in the extremity of impotence, may even be persuaded to try the treatment ourselves, and it may be years before it is relegated to the oblivion it deserves. Nothing better shows the unsettled and nebulous state of present-day therapeutics than the fashion which prevails in treatment, pharmacological or other. It is scarcely an exaggeration to say that here fashion is as fickle and changeable as it is in dress. Every dispenser can testify to the truth of this so far as drugs are concerned.

One obvious moral is deducible from these considerations. It is highly undesirable, not to say blameworthy, for the physician to advocate a new treatment without first thoroughly testing its efficacy. After Newton had been working for some years at his theory of the law of gravitation there was still wanting some evidence which should conclusively prove his point; so instead of publishing his views to the world he locked up his papers in a drawer where they remained for 17 years. When he again worked at the subject the needful evidence was forthcoming and the law was established upon an enduring basis. One can scarcely look for such restraint among our modern therapeutic enthusiasts, but it ought not to be too much to demand of them that they should at least make moderately certain of the efficacy of their methods before giving them to a too credulous world. Neglect of this precaution is burdening medical literature with much that is valueless and rendering it an increasingly hopeless task to winnow the grain from the chaff. The worthlessness of such communications is suggested by the fact that it is precisely the least eminent who are most prodigal of new methods. By all means let us seek to advance therapeutics and be on our guard against a paralysing and deadly routine which is fatal to all progress, but let us also beware not to advocate a new treatment before we have well tested evidence of its efficiency.

Every physician who is worthy of the name has his fads, and it is perfectly right and proper that he should, provided that they have a sound basis; for faddism carries with it a firmness of conviction and an enthusiasm which issue in energetic action, and inspire the patient with a wholesome and most salutary confidence. What the physician has to be on his guard against is a narrow faddism. Let him have his fads, but let them be as broad-based as medicine itself. Note this significant fact, that fads become more and more narrow as the faddists stand lower and lower on the ladder of eminence. If a physician has one all-absorbing fad, and more especially if that fad rests upon a doubtful basis, depend upon it his mental horizon is limited; indeed, some faddists come perilously near the "fixed idea" in their fads, one notion dominating their entire medical thought.

It is nevertheless a fact that some even of these narrow faddists achieve considerable success in practice, and for this reason, that the method of the faddist may be, and often is, well suited to a particular class of case, and, being carried out with enthusiastic conviction and persistency, does do undoubted good in those cases; no small part of the good resulting from the faddist's belief in himself and his system, which begets a like faith in the patient, thus bringing into action the potent factor of suggestion. Moreover, the faddist *has* a system, and it is often better to have a system of some sort, even though it be a poor one, than none at all. Hence the faddist often achieves brilliant results where others have failed, and the patients he cures bruit his fame abroad, and so increase his practice, while those who have got no good from his treatment are more likely to hold their peace.

Now, if a narrow faddism can do so much the obvious moral is that we should carefully study the methods of all the faddists and seek to apply them severally to their appropriate cases. Therein lies the difficulty—to fit the treatment to the disease. It is easy enough to apply the same cut-and-dried treatment to each and every patient, but to apply the correct method to every case is a much more difficult matter; this it is that tests the true skill of the physician. The really great physician is a universal faddist. Speaking for myself, I confess that I am ready not only to listen to the views of the legitimately qualified faddists, but I have gone out of my way to study the methods of that large army of practitioners who have not been admitted within the portals of the profession, and I have learned much that is useful from them. Some of their methods well repay study.

Interesting and instructive though it might be I forbear to give an exhaustive list of the fads of our profession, and will refer to a few only. Some are for starving all their patients, others for feeding them up; some believe in alcohol, others in staunch testotalism; some are for a strictly vegetable diet, others for a mixed diet; some hold that little fluid should be drunk, others that it is well to drink copiously; some have a profound faith in drugs, others place little reliance on them; then there are the grape cure, the water cure, the raw meat cure, the sunlight cure, the mud cure, and a host of other panaceas, each and all of which doubtless do good in certain cases: the mistake is to suppose that any one is universally applicable.

There are also unjustifiable and pernicious fads. We find one medical man resorting to a wholesale amputation of the clitoris, another referring all the ills of the body to the inferior turbinate bones and advocating the knife accordingly. It is pitiable indeed to think what mutilations have been inflicted from such mistaken notions; and yet it is probable that there is scarcely any system of treatment which might not do good to some particular case. Were we to remove the clitoris from a thousand women in succession we should as likely as not benefit some one among them. I care not how far-fetched or eccentric the treatment we adopt, it will

[1] Nos. I., II., III., and IV. were published in THE LANCET of Jan. 5th (p. 51), 12th (p. 122), and 19th (p. 201), and Feb. 2nd (p. 348), 1901, respectively.

in all probability do good in some cases. Let us feed all our patients on boiled acorns, or starve them for a fortnight, or order them to drink many gallons of water daily, and although doubtless we shall kill many we shall stand a good chance of curing a few.

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

THE report before us, which relates to the year 1899, is the eighth of a series the first number of which was published in 1892, just two years after Mr. Shirley Murphy's appointment as medical officer of health of the County of London. The report is divided into two parts. In THE LANCET of Jan. 5th we noticed Part II. which deals principally with questions of sanitary administration somewhat briefly in a leading article. To-day we commence a review of Part I. which treats almost exclusively of the vital statistics of the metropolis. From a medical point of view this is in many respects the most important section of the work, and to its preparation Mr. Shirley Murphy has evidently devoted learning and energy. Having perused it with care we are able to say that it compares favourably with any of its predecessors; in regard to many we have spoken in terms of high commendation. In our judgment the facts in this year's rep rt are skilfully arranged and classified: Mr. Shirley Murphy presents them in such a fashion that the reader should find no difficulty in apprehending the true bearing of the lessons they teach—lessons which he emphasises with good effect for the instruction of the public, and especially for the guidance of the London County Council who have hitherto shown a commendable disposition to act in accordance with his advice. A further object will unquestionably be attained by the publication of these useful reports, for they will shortly come to be recognised as the standard British authority to which constant reference may be made in regard to the prevalence as well as the intensity of the various epidemic and endemic diseases from time to time, and also in regard to the measures which experience has shown to be most appropriate for the suppression of sickness and for the preservation of the public health in a vast and thoroughly typical urban community.

The population of the administrative county of London estimated to the middle of 1899 was 4,568,689. The populations of a considerable number of the existing sanitary districts of London are very small; in 13 out of the 43 they are below 50,000, whilst in five cases they do not reach 25,000. It is well known that rates of birth or of death calculated on small numbers of the living are unreliable. Accordingly, inasmuch as the re-adjustment of metropolitan areas which has recently taken place reduces their number whilst increasing their size, the change must be regarded as an advantageous one from a statistical standpoint; for, according to the best estimates available, we find that one only of the new London boroughs will contain less than 50,000 inhabitants, whereas all but six of them will number more than 100 000. Particulars of the rates of birth and the general death-rates of the sanitary areas of London have already been noticed in these columns in connexion with the annual summaries of the Registrar-General; we shall, therefore, not refer to them further now. Mr. Shirley Murphy, however, carries his analysis of mortality much farther than it is carried in the Somerset House returns and thus suggests additional points for consideration. In Table I. of his report Mr. Shirley Murphy gives the means of comparing the mean annual deaths in the nine years 1891–99 with the number that would have occurred had the death-rates of the 1881–90 period been maintained throughout the nine following years, and the annual number of lives gained or lost in the later period at each age-group is shown. He further expresses this gain or loss in terms of "life capital," which is obtained by applying the mean future lifetime (as ascertained by a life-table) to the number of lives gained or lost at each group of ages. By this means he shows that during the last nine years there has been a mean annual saving in London of 4095 lives, representing a mean annual salvage for 172,763 years of "life capital." The foregoing is a more accurate method than that which is ordinarily adopted for showing the effect on a community of fluctuations in the death-rate, and it is one which we hope shortly to see universally adopted. This can be done with facility by any medical officer of health who will provide himself with a life table of his district and learn to use it. As regards the County of London Mr. Shirley Murphy shows that the number of lives gained annually has increased in each period from 1891–94 up to 1891–98, although in the following year there was a slight decline. On the other hand, the proportion of "life capital" gained to each life saved has decreased in each period up to 1891–98 and has increased in the period 1891–99. This apparent contradiction is due to the fact that the amount of "life capital" gained is not directly proportionate to the number of lives saved, but is dependent also upon the ages at which the saving is effected. Mr. Shirley Murphy next proceeds to show the causes of mortality in respect of which there has been a saving or a loss of "life capital." We have not space to follow him in detail, but we may note his generalisation, which is to the effect that "the net gain of life and 'life capital' secured in London is a balance between gains and losses from particular causes of mortality, and that while in respect of some of these causes, such as phthisis, there has been gain in each of the periods compared with 1881–90 among persons both under and over 25 years of age, in others, such as cancer, there has been loss in practically all of these periods at each age-group. Again, in respect to certain other causes of mortality this constancy is not manifest and often gain in one age-group is in the same period attended by loss in the other age-group."

Infant mortality is now universally accepted as the most reliable test of sanitary condition because of the certainty wherewith it can be computed, wherever an accurate register of births and deaths is available. The deaths occurring in any community, great or small, are calculated directly on the births, whilst the uncertain, and, when at long distances from the census, wholly unreliable factor of population is altogether eliminated. Infant mortality in the Administrative County of London during 1899 was in the proportion of 166 per 1000 births, a rate which is somewhat in excess of the average. London had in the period 1889–98 a lower infant mortality than had any other great English town of more than 200,000 inhabitants except Bristol and West Ham, and in 1899 a lower infant mortality than any such town except Bristol. In the several sanitary districts the rates varied considerably, but by grouping these areas it appears that the eastern districts had the highest infant mortality—namely, 179—and the northern the lowest, 154, the infant mortality of the southern, central, and western groups being intermediate between these extremes.

In connexion with the vital statistics of London we are pleased to notice that the Registrar-General now publishes in his weekly return a table giving the number of new cases of infectious disease notified in each of the London boroughs. As the Registrar-General's returns are widely circulated, both in this country and abroad, the publication of this additional information for London in the return for the first week of the century is an event upon which the authorities at Somerset House as well as at Spring Gardens are to be congratulated.

(To be continued.)

UNIVERSITY OF CAMBRIDGE.—The special board for biology and geology have recommended that the annual grant of £100 made by the University towards the maintenance of a table in Dr. Dohrn's Zoological Station at Naples should be continued for a further period of five years.—The Senate has authorised the obtaining of specifications and tenders for the erection of the Humphry Museum as a part of the new medical school buildings. It is to be hoped that additional contributions to this memorial of a great teacher will be received in order that its completion may be insured without delay. The old museum, which was structurally unsafe, has now been demolished.—Sir M. Foster has been appointed an additional member of the syndicate for the provision within the University of instruction in military subjects.—Dr. Rivers has been appointed a member of the Moral Sciences Board.—At the congregation on Jan. 31st the following degrees were conferred. M.B. and B.C.: E. E. Glynn, Clare; R. A. Walker, Clare; and J. P. Candler, Corpus. M.B. only: S. V. Pearson, Emmanuel. B.C. only: W. H. O. Woods, Selwyn Hostell.

Obituary.

BOWATER JOHN VERNON, F.R.C.S. ENG.,

OPHTHALMIC SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

MR. B. J. VERNON was the second son of the late Rev. Mark Henry Vernon, who was for 40 years vicar of Westfield in Sussex. He was born Oct. 23rd, 1837, and died on Jan. 28th, 1901. At the early age of ten he was entered at Marlborough College where he remained till Midsummer 1856. He there obtained a thoroughly sound education and it will surprise some of the friends of his later life to learn that he was a notable athlete, easily distancing all his competitors at the high jump, in hurdle races, and in short-distance running. In advanced life the deliberate manner in which he habitually moved concealed to a large extent his real strength of limb and capability of exertion. He may be said to have entered the profession by becoming a pupil at the Sussex County Hospital, Brighton, under the immediate supervision of Mr. Jowers, a highly intelligent surgeon, and he remained here, familiarising himself with general medicine and surgery for three years. He then came to London and entered St. Bartholomew's Hospital. After the usual three years' attendance upon lectures he was appointed in 1862 house surgeon for a year to Mr. Wormald and for a second year to Sir James, then Mr., Paget. He took the hospital scholarship in 1862. He passed the Membership of the Royal College of Surgeons of England and the Licentiateship of the Royal College of Physicians of London in 1862 and took the Fellowship of the College of Surgeons in 1864. In the meanwhile he had acquired so good a knowledge of anatomy and was so clean and excellent a dissector that he was made demonstrator of anatomy, which post he held for several years.

When the ophthalmic wards were opened at St. Bartholomew's Hospital in the summer of 1870 he was one of the two surgeons who were appointed—a piece of advancement for which he was indebted to his having been long in attendance at the Moorfields Ophthalmic Hospital and to his having been for some years curator of the museum. This latter post not only afforded him frequent opportunities of seeing the most advanced methods of treatment in ophthalmic practice in the hands of such masters as Sir William Bowman, Mr. Critchett, and Mr. Hulke, but also enabled him to pursue his natural bent for microscopical research, and indeed throughout life he was an excellent microscopist and could prepare, mount, and describe a rare specimen with artistic skill. His hands were adapted for such work. Before he suffered so much from rheumatism his long slender and firm but supple fingers used knife and forceps and scissors with unerring precision. He was an original member of the Ophthalmological Society, which was formed in 1870, though he only attended one or two of the earlier meetings and declined being elected upon the council on grounds of health. He was attached as ophthalmic surgeon to the Great Northern Hospital, and for no less than 27 years to the West London Hospital, in the affairs of which he took a very active interest, acting as secretary to the staff for several years. He was extremely regular in attendance at both places. He had all but completed his term of service at St. Bartholomew's Hospital at the time of his death, as he would have had to retire by seniority next year in accordance with the rules of the hospital.

His health never appeared to be strong; he suffered from indigestion and in the later period of his life from rheumatism or rheumatic gout, which was probably inherited, and affected chiefly the wrist-joints, which were occasionally very painful and swollen, though without appearing to interfere in any way with the neatness and delicacy of his operations. He has often said that at such times if he were left in a room with a closed door he would find himself quite incapable of getting out from the impossibility of turning the handle. A friendly grasp of the hand was appreciated in more senses than one and could not be reciprocated. He was essentially orderly and methodical in all his work. He practically organised the ophthalmic department of St. Bartholomew's Hospital as it now stands. He was an admirable clinical teacher. With a considerable fund of quiet humour he would elicit the chief facts of each case as it was presented to him. If the patient was admitted the notes of the house surgeon were carefully scanned and criticised and material points that had been omitted were added. He was never anxious to operate nor did he ever appear to be desirous of showing his address in the use of instruments. In every operation he gave to the onlookers the feeling that it had only been undertaken because absolutely necessary and that having been determined on it was done as dexterously as possible. He was never hurried, never taken by surprise. Every stroke told; every emergency was anticipated; and it was rare indeed for one of his cases to do badly. His opinion was highly esteemed, not only by his own colleagues, but also by many of those to whom he had given instruction, which secured for him a remunerative but very unostentatious practice. He kept himself well abreast of modern ophthalmological research and there were few proceedings that promised success he did not try at St. Bartholomew's Hospital, though the natural bent of his mind was eminently conservative.

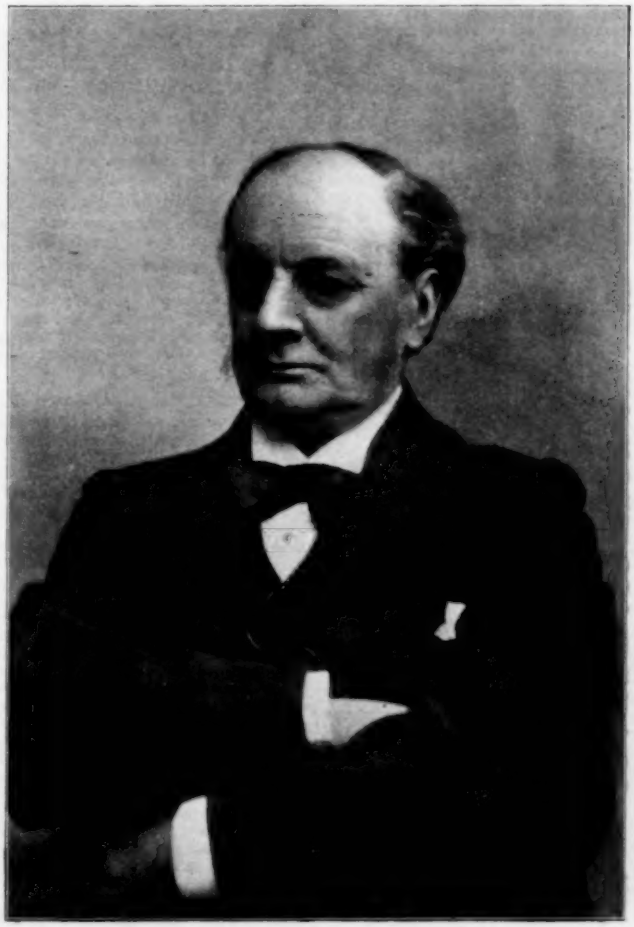
His interests were many and various. He was a keen sportsman, and probably the greatest pleasure he had was to run down to his old friend, John Henry Salter of Tolleshunt D'Arcy, for a day or two in September and bring down a few birds after a stiff walk over the stubble. On such occasions he would return to his work with a firmer and more elastic tread and perhaps with a ray of colour to brighten his naturally dark complexion. He was fond of plants, knew most of the English field flowers by name, and no more grateful remembrance could be sent him by a friend in the country than some wildling of nature orchid it might be, or cyclamen or parnassia, which he would wear as a buttonhole. He loved animals too, and his interests were divided between dogs and birds, the latter, perhaps, claiming most of his attention. He kept many canaries of pure breed, and at one time obtained several with pink feathers by feeding them largely on Chili pepper, but ceased the experiment when he found that some died with small abscesses in the liver, which he attributed to the effects of that fruit. He was of liberal disposition and not unfrequently helped with gifts of money necessitous out-patients who presented themselves at his desk when he saw that food rather than medicine was wanted. Also which was perhaps a still greater tax on his generosity, he would give to a young friend one of his favourite linnets or canaries.

The end came suddenly. He had been at the hospital on Jan. 19th and saw both his in- and out-patients, though complaining of cough and cold. On Sunday, Jan. 20th, he had some kind of spasm of his heart perhaps accompanied by dilatation and causing intense dyspnœa; a second or third attack proved fatal, and thus St. Bartholomew's Hospital was deprived of one of the most gentle, kindly, courteous souls it has ever nourished. The conservatism and loyalty of his character were curiously shown in the fulfilment of his own desire, expressed on more than one occasion, that having been born in the year of the Queen's accession he should be content to end his days with the close of the reign. The little group of mourners who surrounded the grave in which his remains were being deposited—his relatives, his able colleague, Mr. Jessop, and his attached former house surgeons, Dr. J. Attlee, Mr. E. W. Brewerton, and Dr. J. A. Nixon—could hear distinctly the booming of the guns which saluted the body of the Queen as it was borne across the Solent that winter afternoon. Whilst it deepened the impressiveness of the ceremony no circumstance, could he have known it, would have afforded him greater satisfaction.

Mr. Vernon was not a voluminous writer, his energy being chiefly expended in teaching. He contributed, however, several articles to the St. Bartholomew's Hospital Reports. One of these papers was on Congenital Myopia, another on Herpes Ophthalmicus, and a third on Tubercle of the Eye. All of these were characterised by lucidity of expression and gave evidence of care and research. He also for some years supplied reports on ophthalmology to the *Medical Record*.

JAMES EDWARD PRICHARD, M.B. OXON., M.R.C.S. ENG.

DR. JAMES EDWARD PRICHARD died at his residence "Combedale," Redland-road, Bristol, on Feb. 2nd in his fifty-second year. The deceased, who was a son of the late Dr. Augustin Prichard, of Clifton, and a brother of Mr. A. Prichard, senior surgeon to the Bristol Royal Infirmary, received his medical education at the University of Oxford and University College Hospital, London. He graduated



BOWATER JOHN VERNON, F.R.C.S. ENG.

B.A. and M.B. at Oxford in 1879, and took the diplomas of M.R.C.S. Eng. and L.S.A. in 1878 and 1879 respectively. After holding the appointments of house physician at University College Hospital and house surgeon at the Tiverton and Swansea Hospitals, Dr. Prichard commenced practice in Bristol, and at the time of his death held the appointment of surgeon to H.M. Prison at Horfield. The deceased was vice-chairman of the Horfield School Board before the extension of the city boundaries. Dr. Prichard had suffered from carcinoma of the bowel for some time and a few months ago Dr. James Swain performed colotomy for his relief. Dr. Prichard, who was unmarried, was very popular with his fellow-citizens and will be much missed in Clifton and Bristol.

SEVENTH REPORT BY MR. VICTOR HORSLEY TO THE REGISTERED PRACTITIONERS OF ENGLAND AND WALES.

SINCE my last report of the proceedings of the General Medical Council some important events have occurred in the work of the Council: the English College of Physicians and Surgeons have repudiated their obligations under the Medical Act of 1886; the question of medical aid associations has been further advanced; the indefensible confusion of the finances of the Council has been further exposed and will, it may be hoped, shortly be remedied; certain serious penal cases involving in two cases new points have been decided; and finally the *personnel* of the Council has been altered with, as a result, a notable improvement in the conduct and progress of business.

THE REVOLT OF THE ENGLISH COLLEGES AGAINST THE MEDICAL ACT, 1886.

The most serious attempt that has ever been made to injure the Medical Act of 1886 is the recent revolt of the Royal College of Physicians of London and the Royal College of Surgeons of England against the authority of the General Medical Council. It will be remembered that the Act of 1886 was drawn up in the hope that a one-portal system might in substance be arrived at by honourable understandings whereby the guilds and corporations should sink their individual claims more completely than had been provided for in the Act of 1858. Since the foundation of the Council by the Act of 1858 its proceedings have often been disfigured by attempts on the part of one or more corporate bodies to gain special privileges or to retain what, though nominally termed ancient rights, are in effect provisions which are disadvantageous to their competitors in diploma granting. It has, however, been reserved for the College of Physicians of London and College of Surgeons of England to adopt an attitude in regard to the recent educational regulations of the Council which promises to resuscitate the worst features of the earlier troubles of the Council.

The matter at issue raised by the Colleges is simple, being only question of the right of the Council to decide where a student's science career can best be passed, but it is made by some to embrace the wider question whether the Council has any statutory authority over the earliest stages of medical education. Thus it is contended by the English Colleges that the Council has no authority whatever over students at any period of their education and that the edicts of the Council on the subject of the curriculum which have from time to time been, in accordance with the aliphod practice of the Council, termed recommendations, resolutions, suggestions, &c., are not in any way binding on the corporate bodies.

The present dispute turns on the interpretation of Section 18, &c., of the Medical Act, 1858. The terms of the section leave no doubt in the mind of an impartial reader that the Council was intended by the Act to have complete authority over all stages of the medical curriculum and of course it has always worked on that understanding. But as that position is now contested by two of the corporate bodies it is obvious there are only two courses open to the Council. Either a so-called friendly action can be tried at great cost to the profession, with probably only the result of obtaining a worthless decision—for, as the recent case of Hunter shows, our highest judicial authorities know nothing about medical education or even about the granting of medical degrees by the universities. Or the matter can be settled in an amended Medical Act in which the powers and duties of the Council would be laid down in such minute detail as to prevent the possibility of any corporation seeking to separate itself from the federation which the Council constitutes. The previous unfortunate experiences of the Council in its actions against the College of Physicians and the late Mr. Hunter will, it is to be hoped, prevent any resort to litigation in this really contemptible affair. It may be hoped that the time and attention of the Council and profession have not been wholly wasted in this matter, as such demonstrations of self-interest on the part of a corporation can only have the effect of furthering the adoption of the much required one-portal system. The general feeling of the Council, it may be added, is far more favourably disposed towards the one-portal system than it was three years ago.

MEDICAL AID ASSOCIATIONS.

The attitude of the Council on this subject has become considerably strengthened, but, as will be seen from the press reports of the last session of the Council, the report of the Medical Aid Association Committee as presented was misleading and still remains unsatisfactory. The matter at issue is the question of the formation of a conciliation board. It will be remembered that this important subject was first raised in 1899 by Dr. Bruce, Direct Representative for Scotland, and it would naturally be a great gain if his original proposal could be successfully accomplished. The idea of a conciliation board, as proposed by Dr. Bruce, was that representatives of the profession and representatives of the friendly societies should meet in conference and draw up heads of agreements on the fundamental principles underlying the proceedings and the working of the medical department of the friendly societies. But in 1898 the General Medical Council appointed certain members to receive a conference of the leading members of the friendly societies so that there might be an interchange of views before the constitution of the conciliation board could be arranged, and at this meeting the all-important question of agreeing upon a wage limit for membership was brought up. The representatives of the friendly societies informed the representatives of the General Medical Council that under no circumstances would the friendly societies consent to this question being raised at a conciliation board. At the annual conference of the officers of the friendly societies that same year this hostile attitude was affirmed. At the time when Dr. Bruce's project was mooted in the General Medical Council I drew attention to this matter and to the primary importance of determining before the meeting of a conciliation board that any such board must have full power to discuss all questions which affected the interests of the profession and above all the fundamental question of the financial position of persons who might seek to obtain the special medical benefits offered by a friendly society. If the conciliation board commenced work with their hands tied to the extent proposed by the representatives of the friendly societies it is plain that any medical representatives who took part in such proceedings would be sacrificing the interests of their fellow-practitioners. The report of the Medical Aid Committee presented last session is unsatisfactory because it in nowise provides for the safeguarding of this point and because it conveys an erroneous rendering of the attitude of the British Medical Association on this question. It is, however, only an interim report. The final report is promised for the next session.

THE FINANCES OF THE COUNCIL.

I drew attention two years ago to the condition of the finances of the Council and pointed out that for a number of years the income had been steadily falling whereas the expenses had been year by year rapidly increasing; further, that for years there had been a deficit, this indeed amounting in 1898 to over £2000 on a turnover of £10,000; that although to meet this deficit and increased expense there were certain funds in the possession of the branches of the Council the financial arrangements between the Council and its branches were not only very confused but in part positively illegal, and that the Irish Branch was practically bankrupt. These statements, though officially denied by the treasurers, Mr. Bryant and Sir Dyce Duckworth, have been fully confirmed by the events and disclosures of the last two years. On Dec. 4th, 1899, I obtained the appointment of a special finance committee to examine into

the facts. That committee consisted of the trustees of the Council and its branches as well as the ordinary finance committee. The report which they furnished the Council was so useless that I moved that the committee resume their work, and I specified three references that the committee were to report upon—namely: (1) the financial position of the Council and its branches as regards assets and liabilities; (2) the relations of the income and expenditure of the Council and its branches for the last 10 years; and (3) the measures that appear to be desirable to place the Council's finances on a satisfactory basis. In presenting their report at the recent session the committee deliberately refrained from reporting on the most important of these references—viz., how the finances of the Council could be put upon a proper basis—and instead of reporting properly on the other two the committee merely made a few suggestions for small domestic economies connected with the arrangements of the Council meeting. Further, the general narrative of the report presented at the recent session by this committee was written in a highly optimistic tone, and though an annual deficit of £110 was admitted on the average of the last 10 years the committee stated that the condition of the finances of the Council was not serious. It is hardly credible, but nevertheless the fact, that the Finance Committee, the members of which formed the majority of the special committee, stated in even their imperfect report six months before that the average yearly deficit on the last seven years was over £600, that to cover this the Council was "spending its capital," and that "the Council ought seriously to consider whether it is not possible to reduce its expenditure to a very large extent." It is quite obvious that these two reports are self-contradictory. The feeling in the Council of dissatisfaction with the way in which the finances were being dealt with was so marked that in spite of a speech by Dr. MacAlister, well calculated to mystify anyone not familiar with the facts, and a personal appeal by the President to pass the report and so close the matter, the debate was adjourned in order that the subject should be thoroughly threshed out at the next session. Possibly the chairman of the Business Committee, Dr. MacAlister, may again succeed, as he has done in the last three sessions, in shelving this important if unpleasant subject from day to day until the last day of the session when everything is hastily rushed through, but I have every hope that the last two years' work on this point will finally result in a thorough reform of the administration of the funds of the Council.

PERSONATION OF REGISTERED PRACTITIONERS BY FRAUDULENT PERSONS.

At the November Session, 1898, I carried a motion in the Council instructing the Executive Committee to report on the subject of fraudulent personation of practitioners and on the best method of securing accuracy of registration. The report of the Executive Committee being useless the Council on my motion appointed a special committee to deal with the subject. The committee, of which I was appointed chairman, reported fully two years ago, but by reason of strong official resistance and continual shelving of the report by the chairman of the Business Committee, Dr. MacAlister, the question and the report have not yet receive adequate consideration.

PERSONNEL OF THE COUNCIL.

The profession is to be sincerely congratulated upon the fact that by reason of various changes in the *personnel* of the Council questions involving progress and reform are certain to receive much more favourable consideration in the future than in past sessions of the Council.

Jan. 31st, 1901. VICTOR HORSLEY.

PRESENTATIONS TO MEDICAL MEN.—At a numerously attended meeting of friends and inhabitants of Llanerchymedd, Anglesey, held on Jan. 30th, Mr. William Evans, L.R.C.P. Edin., M.R.C.S.Eng., on his retiring from medical officership of the Llanerchymedd district, covering the long period of 48 years, and medical officer of the workhouse since its opening in 1869, was presented with an address, a portrait to be preserved in the guardians' boardroom, a silver tray, and purse of gold, as tokens of esteem and regard and a recognition of the fidelity with which he discharged his official duties.

THE RECENT OUTBREAK OF DIPHTHERIA AT OLD HEATH, COLCHESTER.

THE *Essex Telegraph* of Jan. 5th, 1901, reported that the sanitary misfortunes of Old Heath, a hamlet on the outskirts of Colchester, to which one or two references, direct and indirect, have already been made in our columns, culminated in an outbreak of scarlet fever and diphtheria. These two diseases, so fatal during the early years of life, have now fortunately subsided, but not without some loss of life.

There are many small communities, especially such as are situated in the outlying districts of large towns, where outbreaks of scarlet fever and diphtheria are present, and there are some where they frequently recur; and, as a rule, the only lesson, if any, to be drawn from such epidemics is that the locality requires some obvious sanitary reform—a drainage scheme, drastic treatment of irresponsible landlords, an isolation hospital, or a more modern method of administration. But the plight of Old Heath, Colchester, was associated with, or rather perhaps resulted in, a correspondence which is of general interest, and it may be instructive to our readers to have the whole story before them, seeing that it involves a consideration of the question as to how far the method of treatment adopted by a public official can reasonably be challenged.

The Public Health of Colchester at the End of the Third Quarter of 1900.

At the beginning of October, 1900, Dr. George Brown, the medical officer of health of Colchester, published a report which showed that the public health of the borough was not wholly good, and his figures mentioned seven cases of diphtheria at that time. The seven cases of diphtheria had, he stated, occurred in different quarters—two in the Canterbury-road, one at Hythe, and four at Old Heath—though he gave it as an opinion that "the malady has evidently a local origin, local in being caused by the houses themselves and their surroundings rather than the causes being attributable to the whole district." About this time the attendances at the Old Heath Board School were very much lowered by the abstention of a large number of children through sickness, and the school was closed at Dr. Brown's instance on Oct. 1st, not to reopen for continuous instruction until Jan. 21st, 1901. This sickness seems to have been greatly prevalent in the Old Heath district and Dr. Brown thus refers to it: "In addition to the diphtheria which has affected the district a large number of children have suffered from quinsy or inflammation of the throat. ..... The disease was of a septic or poisonous type caused by the air being impregnated by a large quantity of manure spread over a field on the west of the village." Dr. Brown's report does not show whether his diagnosis of quinsy was made from actual inspection of the throats of the sufferers. The report closed with the announcement that the infectious hospital of Colchester, at Myland, contained certain cases of diphtheria—four apparently, but the wording of the paragraph is not very clear.

The Value of Antitoxin.

There was nothing on the face of Dr. Brown's report of a particularly sensational character, but it proved to be the starting point of a local difference of opinion the cause and developments of which are of considerable importance not only to all medical men and sanitary authorities but to the public. On Oct. 20th there was published in the *Essex County Standard* a correspondence between Mr. E. A. Hunt, senior surgeon to the Essex and Colchester Hospital and a member of the School Board, and the municipal authorities of Colchester. This correspondence we have already referred to in THE LANCET and the gist of it is as follows. On Oct. 4th Mr. Hunt found two children at Old Heath suffering from diphtheria. On the following day he found that a third child of the same family showed symptoms of diphtheria. He injected the children with anti-diphtheritic serum and notified the three cases as diphtheria to the medical officer of health who took the two elder children into the infectious hospital, but the third one, an infant, aged eight months, was not admitted Mr. Hunt

wrote for an explanation of this, and in his letter also asked whether it was the medical officer of health's "custom to use the antitoxin in diphtheria cases at the infectious hospital." The medical officer of health called upon Mr. Hunt and said that he had never found it necessary to use the antitoxin, and that the baby was not admitted to the infectious hospital because there was no room for it; and in a letter following the interview he promised "if I find it necessary to inject your patients or any other at the infectious hospital you may rest assured that it shall be done."

During October and November the health of Old Heath did not improve, several cases of diphtheria were notified and the school remained closed, as already mentioned. Mr. Hunt now took upon himself the task of attempting to explain through the lay press the merits of the antitoxin treatment of diphtheria, and this he did in a letter dated Oct. 19th, 1900, and published in the *Essex Telegraph* and *Essex County Standard* of Oct. 27th, pointing out that his objects in taking up the matter were "first, to advocate and advertise throughout the borough one of the most blessed remedies ever vouchsafed to man ..... and second, to remove the reproach from Colchester that in its infectious hospital this remedy was not in use." Later Mr. Hunt published a further argument in favour of the antitoxin treatment of diphtheria, reinforcing himself with the opinions of Dr. J. C. Thresh, the medical officer of health of Essex county, and of Dr. J. J. Macgregor, surgeon to the Essex and Colchester Hospital. Mr. Hunt stated that before the board school was closed 40 children were absent suffering from sore throat. These, he said, were the children described in Dr. Brown's report as suffering from quinsy or inflammation of the throat, but according to Mr. Hunt there could be no doubt that some, if not many, of these cases were diphtheria, for evidence had been submitted to him that in certain cases diphtheritic paralysis had ensued. On Saturday, Nov. 3rd, appeared a letter from the medical officer of health in the two newspapers above mentioned. Dr. Brown did not categorically state that he would not use the antitoxin in the treatment of diphtheria, but he said that "the Local Government Board has not yet advised any sanitary authority to use the much-vaunted antitoxin," adding, "I freely confess that I have not bowed the knee to the medicinal Baal in the treatment of this disease (diphtheria), but I do not in any way consider that this is the only or chief remedy in this malady, as the remedies employed at the infectious hospital for some years past have rendered antitoxin unnecessary, and I consider the results achieved there are incomparably superior and more satisfactory than those given by the serum treatment."

The School Board demand an Expert Inquiry.

Towards the end of October the Colchester School Board, feeling that some excellent work that had been done at the board school at Old Heath was being entirely sacrificed by the continued closure of the school owing to diphtheria, demanded an expert inquiry into the subject. Mr. Hunt moved a resolution at the meeting of the school board held on Oct. 26th to the effect that the town council should call the Local Government Board into consultation and that an expert in outbreaks of diphtheria should be sent to assist the council in endeavouring to discover the cause of the diphtheria and to stop its spread. This resolution was carried *nem. con.*

The *Essex Telegraph* on Nov. 10th contained a brief letter from the medical officer of health relative to the outbreak at Old Heath in which the following somewhat remarkable passage occurs: "But Mr. Hunt rushes into a long statement about a treatment of disease that under some circumstances he holds infallible as a means of cure and ignores another that experience and proof have proved itself of greater value in my eyes, yet he has never been charged as a fault for not using the safer remedy." On Dec. 8th the *Essex Telegraph* published the report of the medical officer of health for the month of November in which it was stated that "of 32 persons admitted to the infectious diseases hospital only one died, a child suffering from diphtheria, aged three, whom it was impossible to treat."

A Report of the Medical Officer of Health to the Sanitary Committee.

On Dec. 12th THE LANCET received from the medical officer of health a copy of a report made by him to the chairman and other members of the sanitary committee of the borough of Colchester on the occurrence of diphtheria at Old Heath and on the sanitary condition of that locality. In this it was stated that since 1894 a sewerage system has been carried out and that, in Dr. Brown's opinion, "the general health of the locality has of recent years greatly improved." The report also affirmed all the cases of diphtheria to be "of a mild type" and suggested as the origin of the outbreak "the effects upon the throats of the children attending Old Heath Board School caused by an offensive effluvium from some manure which was laid on a field near by previous to being ploughed in. At this time the air was muggy and humid and warm and a slight breeze from the west brought a very disagreeable odour with it to the schoolhouse and houses adjoining, and 22 of the children had an affection of the throat of a septic, but not of a diphtheritic, character, but of such a nature as to render the incursion of diphtheria easy and, in my opinion, render the children very liable to take on the malady." The report went on to state that orders were given for the ploughing in of the manure and the closing of the school. The medical officer of health expressly exonerated from blame both the water- and milk-supply of the locality, and recorded as his view that "the seriousness of the outbreak has been greatly magnified." But he held the housing of Old Heath as chiefly to blame. "I therefore regard," said the report, "the affection of the throat from which the children suffered was the *causa causans*, and the efficient agent was the kind of houses in which the children lived. The disease as a whole occurred in houses widely separate from each other, and it was most severe where the children were numerous and congregated in a small room or kitchen in the evenings, breathing the polluted air of their small abodes. In the houses where the tenants were few, if the disease occurred, it was comparatively mild and was soon recovered from."

The Question of Responsibility.

There is nothing novel in the fact of diphtheria recurring in a suburban locality and leading to the closing of a school, the sickness of many, and the death of some. But the particularly interesting and somewhat unique point in the story is the attitude of the medical officer of health towards the antitoxin treatment of diphtheria, an attitude which can both be criticised sharply and defended effectively.

It is quite without the province of THE LANCET to attempt to dictate to any qualified medical man that he should or should not use a certain remedy for a certain disease. No corporation has ever attempted to bind its members to a definite scheme of therapeutics, and for any sanitary authority to attempt to do this would not only be flat tyranny but would certainly, in our view, fatally narrow the scope of medicine. Therefore we cannot say in so many words that Dr. Brown ought to treat diphtheria patients with antitoxin, nor can we say that his sanitary authority should influence him to do so. But Dr. Brown is a public officer and not a private individual and can be reasoned with though not coerced. He is under the jurisdiction of the sanitary committee who have to think of what is due to the public and nothing else. They have not to weigh their feelings as to drugs, as to medical treatment, or as to private differences between individuals. It is their duty simply to see that the isolation of infectious cases is properly carried out, that an infectious hospital duly administered awaits the reception of such cases, and that nothing is done to render such institutions inoperative. Now the medical officer of health is not at liberty to the same extent that a private individual is to carry out an individual line of treatment. He is the servant of the authority who are themselves the servants of the community, and if the community desire the antitoxin treatment of diphtheria he would be well advised to let them have it. The Local Government Board have laid down no rules on the subject; he therefore cannot be compelled to use the modern treatment which is accepted by practically the whole medical world as valuable, but the awkwardness of his not doing so may be pointed out to him. Dr. Brown appears to possess some treatment of his own—at least he refers in his reports to some method of therapeutics which he has always found so useful as to render the antitoxin treatment unnecessary. If Dr. Brown has really discovered a treatment of his own, which is productive of better results than are admittedly obtained by the application of antitoxin used early, it is, it seems to us, incumbent upon him to

announce it to the world; but if he is referring to some local application to the throat it might perhaps serve to allay public anxiety if he were to explain the reasons why the local application precludes the use of such a commonly accepted remedy as antitoxin. We feel sure Dr. Brown would be considering the best interests of his district were he thus far to adapt himself to the circumstances.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary meeting of the Comitia was held on Jan. 31st, Sir WILLIAM SELBY CHURCH, the President, being in the chair.

The PRESIDENT referred in appropriate terms to the death of the Queen and proposed from the chair the following motion which was adopted in the usual manner:—

That this College humbly approach His Majesty the King and express its profound sorrow at the loss which His Majesty and the Royal Family have sustained, and at the same time assure him of our loyalty and devotion to his throne and person.

The SENIOR CENSOR (Dr. W. Cayley) in an eloquent speech proposed a vote of congratulation to the President on the honour conferred upon him by the late Queen, and referred to the work which the President had performed whilst serving on the Royal Commission appointed to consider and report upon the care and treatment of the sick and wounded during the South African campaign. Dr. Cayley especially commented upon the manner in which the Royal Army Medical Corps had been cleared from the charges brought against its members and further congratulated the President on his return.—The motion was seconded by the TREASURER (Sir Dyce Duckworth) and carried unanimously.—The PRESIDENT returned thanks to the College in well-chosen and modest terms, intimating that the honour spoken of by the Senior Censor reflected more to the College than to himself personally.

The SECOND CENSOR (Dr. C. Theodore Williams) proposed a vote of thanks to Dr. F. W. Pavy for having acted as pro-President during the absence of the President in South Africa.—This was seconded by the FOURTH CENSOR (Dr. T. H. Green) and carried unanimously.—Dr. PAVY returned thanks to the College for the resolution just passed.

The PRESIDENT announced that he had appointed Dr. Norman Moore Harveian Orator for the year and Dr. Judson Bury Bradshaw Lecturer, and that the Council had appointed Dr. W. H. Corfield Milroy Lecturer for 1902.

The following gentlemen having passed the required examination were admitted Members of the College: Francis Arthur Bainbridge, B.A. Cantab., L.R.C.P. Lond.; William Samuel Octavius Byrne, B.A., M.D. Dub.; Norman Bruce Elliott, M.D. Durh., L.R.C.P. Lond.; John Shields Fairbairn, M.A., M.B. Oxon., L.R.C.P. Lond.; Hugh A. McCallum, M.D. Western Univ., Ontario; Frederick Stephen Palmer, M.D. Durh., L.R.C.P. Lond.; George Eric Campbell Pritchard, M.A., M.D. Oxon.; Henry John Forbes Simson, M.B. Edin.; and Francis Hugo Thiele, M.D. Lond.

Licences to practise were granted to 130 gentlemen and diplomas in public health (conjointly with the Royal College of Surgeons of England) to eight gentlemen who had passed the necessary examination.

Communications addressed to the College were received (1) from the University of Birmingham, asking to be placed on the same footing as other universities as regards the acceptance by the College of certain of the university examinations in lieu of its own; (2) from the Incorporated Society of Medical Officers of Health, asking the support of the College to a representation they have made to the Local Government Board with a view to improve the statistical value of the returns of births, deaths, and notifiable diseases; (3) from the same, on the certification and classification of diarrhœa deaths; (4) from the General Medical Council, forwarding a resolution of Dec. 4th last announcing their adherence to their former resolution (June 7th, 1899) with reference to the registration of medical students; (5) from the same, forwarding the new rules, adopted by the Council on Dec. 5th last, for diplomas in public health granted after Jan. 1st, 1902; (6) from the same asking for a detailed list of exemptions granted by the College from any part of its examinations held during 1897, 1898, and 1899; and (7) from the secretary of the College of Surgeons (3) reporting certain proceedings of their council on Nov. 8th and Dec. 13th, 1900, and Jan. 10th, 1901; and (8) from the University of Glasgow inviting the College to send delegates to take part in the 450th anniversary of the founding of the University.—It was resolved on the proposal of the TREASURER, seconded by Dr. ALLCHIN, to accept the invitation.

Nos. 1, 4, 5, and 6 were referred to the Committee of Management.

A report, dated Dec. 8th last, was received from the representative of the College (Sir Dyce Duckworth) in the General Medical Council.

The following Fellows were elected Councillors: Sir George H. Philipson, Dr. J. F. Goodhart, Dr. F. de Havilland Hall, Dr. W. Ewart, and Dr. W. H. Dickinson (the last named in place of Dr. J. C. Thorowgood who has resigned).

The President nominated Mr. Bryan Farrer, jun., Standing Council to the College; Mr. J. Millar Thomson, F.R.S., was elected an examiner in chemistry in place of Dr. Laurie, who has resigned; and Dr. Andrew M. Paterson an examiner in place of Dr. A. W. Hughes, deceased.

The annual report, dated Jan. 15th, of the Conjoint Finance Committee and the quarterly report of the College Finance Committee were received and adopted.

A report was received and adopted from the Committee of Management dated Dec. 10th last. Amongst the various matters therein dealt with was the recognition of Cooke's School of Anatomy as a place of instruction in anatomy and physiology for candidates referred at the second examination.

A report from the Laboratories Committee dated Dec. 7th was received and adopted.

The REGISTRAR moved that By-law CXXXVI. be amended and re-enacted for the first time as follows, to render it conformable to the regulations of the Conjoint Board, the alteration consisting in the addition of the words printed in italics:—

A candidate shall not be admitted to the third or final examination till the expiration of five winter and five summer sessions from the date of registration as a medical student, *and of four winter and four summer sessions after passing Parts I. and III. of the first examination*, and of two winter and two summer sessions after passing the second examination.

Books and other publications presented to the library during the past quarter were received and the thanks of the College accorded to the donors.

After some further formal business the PRESIDENT dissolved the Comitia.

LITERARY INTELLIGENCE.—The Transactions of the Otological Society of the United Kingdom, a review of which appeared in THE LANCET of Feb. 2nd, page 334, are published by Messrs. J. and A. Churchill.

FOREIGN UNIVERSITY INTELLIGENCE.—*Erlangen:* Professor Richard Frommel will retire from the chair of Midwifery and Gynæcology at the conclusion of the current winter session.—*Halle:* Dr. Bumm of Basle has been appointed to succeed Professor Fehling.—*Heidelberg:* Dr. Witzel of Jena has been appointed Director of the Dental Institute in succession to Dr. Jung.—*Marburg:* Dr. Friedrich Schenck of Würzburg has been appointed to the chair of Physiology vacated by Dr. Kossel, who goes to Heidelberg.—*St. Petersburg (Military Medical Academy):* Dr. Walter has been recognised as *privat-docent* of Physiology.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next general meeting of this association will be held at the London County Asylum, Claybury, on Feb. 14th, 1901, under the presidency of Dr. Fletcher Beach. The medical superintendent, Dr. C. T. Ewart and Dr. Eric France, and the steward will take members over the General Asylum, Claybury Hall for private patients, the Farm, and the Dibdin bacteria beds for sewage, on their arrival at eleven o'clock.—In the unavoidable absence of Dr. Mott a demonstration upon the Chemistry of Nerve Degeneration will be given by Professor Halliburton at three o'clock in the Pathological Laboratory of the London Asylums at Claybury.—A demonstration upon the Morbid Changes in Dementia by Dr. Joseph Shaw Bolton will also take place.—A paper will be read by Dr. Joseph Wiglesworth on a Case of Murder, the result of pure Homicidal Impulse

THE WAR IN SOUTH AFRICA.

WE said last week that there was but little to chronicle in the way of war news from South Africa and that things had reached a somewhat stagnant stage. But there are now signs of renewed activity. Horses and reinforcements in large numbers are being sent from this country and the colonies to the Cape. De Wet's force is moving towards Cape Colony, while General Knox's troops are endeavouring to head off the guerilla leader before he reaches the banks of the Orange river. Some seven columns of British troops are moving, or about to move, on a systematic plan over the whole country, and presumably on converging lines and in communication with one another. Whether any of them come up with the Boers or not remains to be seen. They will attempt to sweep the country of all supplies of cattle, forage, horses, and food crops, and try to drive the foe into circumscribed positions where, deprived of supplies, they will have to fight in order to live. That seems to be shortly the proposed method of future procedure. Among the killed during the capture of the post at Modderfontein, which was apparently rushed by a large body of Boers on a very dark night and in heavy rain, we regret to notice the name of Civil Surgeon Walker. The sick casualties continue to be rather heavy. The lists of those suffering or dangerously ill from enteric fever are long—to say nothing of the fatal cases. According to the latest return issued by the War Office the total reduction of the military forces through war in South Africa reported since its beginning and up to and including the month of January is:—

	Officers.	Non-commissioned officers and men.	
Deaths in South Africa	635	.....	12,354
Missing and prisoners	15	.....	922
Invalids sent home who have died ...	4	.....	265
Invalids sent home who have left the service as unfit	—	.....	1,734
	654	.....	15,275
			15,929

THE IMPERIAL YEOMANRY HOSPITAL, PRETORIA.

(FROM A CORRESPONDENT.)

IN addition to the field hospital, the bearer company, and the branch hospital at Mackenzie's Farm, the Yeomanry Hospitals Committee have sent out to South Africa two absolutely independent general hospitals, one at Deelfontein and the other at Pretoria. The latter hospital landed in Cape Town on July 16th, 1900, and opened at Pretoria for the reception of patients on August 18th.

The staff now consists of the following:—Commandant and principal medical officer, Surgeon-Major C. R. Kilkelly, of Cairo and Dr. Langdon Brown who came out on short leave from their posts at home have returned, and Dr. Brickwell has been invalided to England. The nursing staff consists of Miss Nisbet the matron, Miss Leggatt the assistant matron, and 35 nursing sisters. The *personnel* consists of one warrant officer, 25 non-commissioned officers, and 150 men.

The hospital is situated about two miles east of, and 300 feet above, Pretoria on the Megalliesberg range which bounds to the north the valley in which the town lies. It consists of a large two-storeyed house belonging to Mr. Beckett and of a number of tents, the total accommodation being 506 fully-equipped beds, 69 of which are for officers (Fig. 1). We give a sketch by one of the patients, Mr. G. A. Chadwick, 3rd Regiment Australian Bushmen. In the house there are seven rooms for sick officers containing 29 beds, and two rooms for men containing 18 beds. The latter are kept for medical and surgical cases requiring special treatment. One of the rooms in the upper storey is fitted up as an operating-room and an adjacent room is used for surgical instruments. The hall is used as a reading-room and the conservatory as a mess-room for the sick officers and medical staff. The rest of the house is used for kitchens, store-rooms, bath-rooms, and officers' quarters. Several verandahs around the house are a great boon to the patients who are able to sit up. A large outlying building at the back of the house is fitted up for linen stores, hardware stores, dairy, and an x ray room. Behind this building is an electric light installation fitted with an engine and a dynamo, by which the hospital (including the tents and grounds) is lighted.

The tents are pitched in the grounds, and just in front of the house there is a series of terraces with fruit-gardens and vineyards. The men's tents are divided into the following sections: medical section, enteric fever section, surgical section, and general section, the last-named being reserved for the less severe cases. In the medical section there are 30 tents, in the surgical section 12, in the enteric fever section 18, and in the general section nine, each tent containing six beds. The officers' tents consist of three tents for enteric fever cases and three for dysentery cases, each tent containing four beds. There is also a convalescent section for officers (consisting of four tents, each containing four beds) which is reserved for those officers who have sufficiently recovered to join in the officers' mess and who do not require the attentions of a nurse. The accompanying plan shows the general arrangement of the camp (Fig. 2). The mortuary, latrines, refuse pits, and receptacles for soiled linen lie to the west of the plan in a group. With the exception of the enteric fever section the tents are of the "E. P." pattern, which appears to be the best kind of tent yet made. They are economical in space, do not let in rain, and they withstand the worst storms. Their only defect is their weight which renders them difficult of transport. These tents are arranged in sets of three, thus forming "wards" of 18

FIG. 1.

Sketch by Mr. G. A. Chadwick of the Imperial Yeomanry Hospital at Pretoria.

Grenadier Guards; consulting physician, Dr. J. W. Washbourn; surgeons, Mr. A. B. J. Douglas and Mr. H. Williamson; physicians, Dr. Crowther Smith, Dr. Davies, Dr. Frost, and Dr. Hayes; quartermaster, Lieutenant Bruce, R.A.M.C.; and secretary, Mr. Vincent. Dr. F. M. Sandwith

beds, the "porches" in front of the doorways forming a covered way from one tent to another without interfering with the air-space between the adjacent tents. In some of the sections one tent in each "ward" is used as a day-room, four of the beds being removed to the other tents.

The enteric fever section is situated below the other sections, from which it is divided by a broad avenue. It consists of separate hospital marquees.

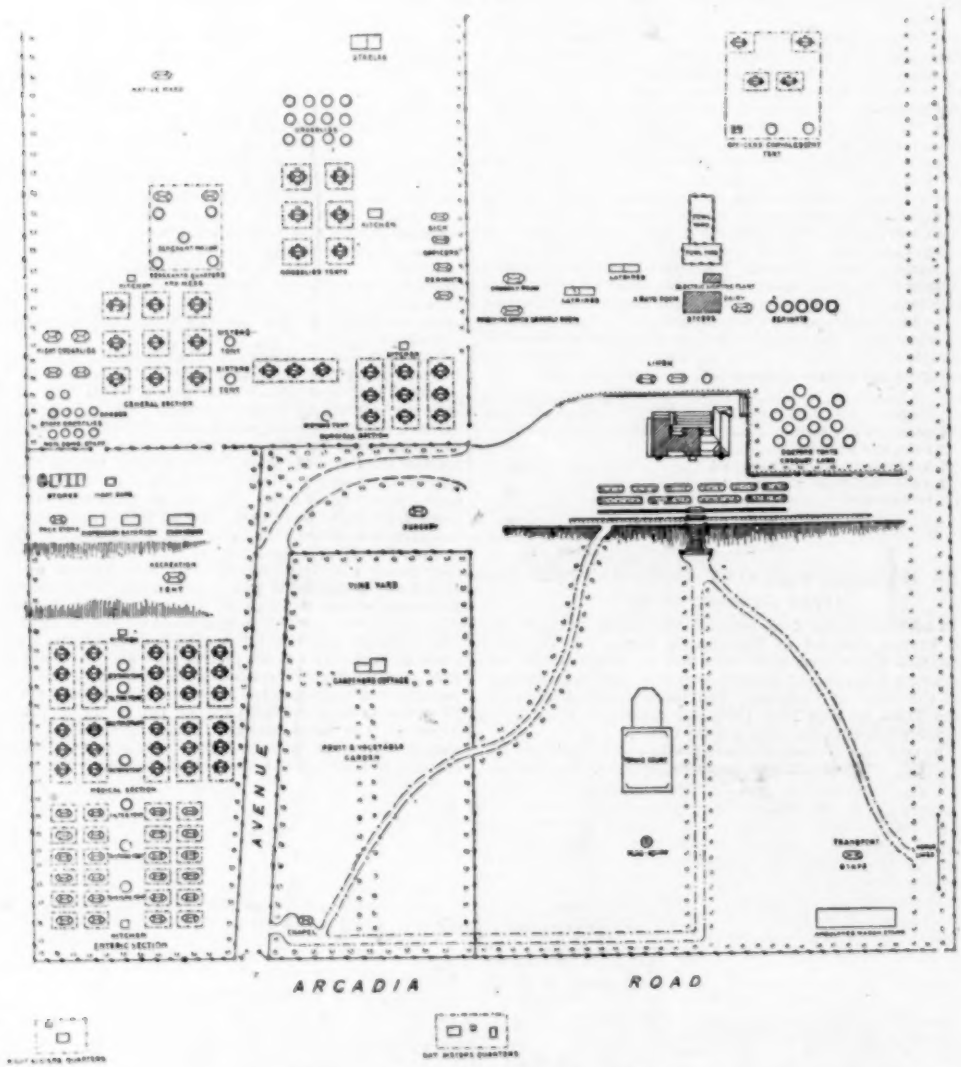
The medical officers (Fig. 3) live in double fly bell tents pitched above the croquet lawn by the side of the house. Two houses just outside the hospital grounds, formerly occupied by Mr. Reitz, the state secretary, and by Mr. MacFadyean, accommodate the nursing staff. One of these houses is used by the day sisters and the other by the night sisters. Both have been fitted with bath-rooms, and in the day sisters' house there is a mess-room and a kitchen. The *personnel* is accommodated in "E. P." tents and marquees pitched to the north of the main camp, with separate kitchen and mess. The sergeants, who also have their own kitchen and mess, live in bell tents. The natives employed about the camp, of whom there are about 100, are located some distance from the rest of the camp in cleverly built shelters made by themselves. A marquee has been fitted up for them as a hospital under the care of Dr. Davies.

Between the medical section and the tents for the *personnel* is a set of buildings consisting of a cookhouse, a bakehouse and lavatory, a dispensary, a provision store, a dry canteen, a pack store, and an ordnance equipment store. The chapel consists of a large tent and hours are fixed for services for all denominations. The whole of the camp looks very pretty and smart with the paths marked out by white stones and with little gardens in front of the tents.

The water-supply is derived from the Pretoria Waterworks. The water, which has been frequently analysed by Dr. Turner and Colonel Lane Notter, R.A.M.C., and found to be of excellent quality, is pumped up from the town into closed tanks. All the water used for drinking purposes is filtered through Berkefeld filters placed at intervals through the camp.

The sewage is disposed of by the pail system, but special arrangements are made for the disposal of the stools from cases of enteric fever or dysentery. The bedpans are taken to a special building and the stools are emptied into pails

FIG. 2.



Plan of the Imperial Yeomanry Hospital at Pretoria.

containing a disinfectant. Thence they are transferred to a large copper in which they are boiled and sterilised according to the method described by Major Cummings, R.A.M.C The bedpans are left in the building to be washed and cleansed in a disinfectant and are ultimately returned to the wards. This method of treating infective stools is easy of application and most effective. There is very little offensive odour and with slight modifications it might be used with advantage in the fever hospitals at home. The slops from the wards are emptied into tanks on wheels and are disposed of outside the hospital grounds. The dry refuse is also taken outside the hospital grounds, where it is burnt and then buried.

The linen is washed at the Pretoria Steam Laundry. All infected articles are disinfected at the hospital in a Thresh's steam steriliser, the soiled articles being first soaked in a solution of izal.

Up to the present date (Dec. 27th, 1900) over 2000 patients, including 200 officers, have been treated in this hospital. Patients from a distance arrive either in convoys or in hospital trains. The railway siding is about half a mile from the hospital, whither the patients are conveyed in our own ambulances. Patients from Pretoria and its immediate neighbourhood come either in ambulances or in Indian dhoolies carried by native bearers. The majority of our patients are acute cases, inasmuch as there is accommodation for convalescent patients in the Yeomanry and in the convalescent camps.

The medical cases consist principally of enteric fever, dysentery, and malaria. In Pretoria itself malaria does not appear to occur, but to the north in the bush veldt, to the west in the Rustenburg district, and along the eastern line towards Komati Poort it is very prevalent. On Nov. 20th 32 cases of malaria all contracted within a few days were admitted from the Rustenberg district. The enteric fever cases came from various parts; a noticeable feature has been the tendency to fatal cardiac failure in cases which would otherwise not be especially severe. A similar observation was made at the Deelfontein Hospital in patients who had been exposed to excessive fatigue previously to being attacked with the disease. In addition to malaria and enteric fever there have been a number of cases of indefinite pyrexia which go under the much-abused name of "simple continued fever." Some of these cases are cases of influenza, but others appear to belong to some undetermined fever. Dr. G. Turner, the medical officer of health of the Transvaal Colony, has started a compulsory notification of infective diseases similar to that in force at home, which will no doubt be of value in tracing these diseases to their origin.

The surgical work of the hospital has naturally depended upon the locality of the fighting. During the earlier days of the hospital the fighting round Pretoria was desultory and the casualties were few, and except for the occasional arrival of a convoy from Rustenburg or some other outlying district the cases were similiar to those found in a civil hospital at home. Our operations included several for the radical cure of hernia and

FIG. 3.

Medical and Nursing Staff of the Imperial Yeomanry Hospital at Pretoria.

varicocele, two for the removal of the vermiform appendix, cases of nerve suture, a few amputations, and many cases of severe hæmorrhoids. In addition to these there have always been, even at the beginning, a certain number of cases of gunshot wounds. Surgical complications in the dysentery and enteric fever cases have been very few, operative treatment having only been called for three times, once for perforation of a dysenteric ulcer, once for amputation of a gangrenous leg due to arteritis occurring in enteric fever, and once for trephining the mastoid antrum in a case of middle-ear complication due to the same cause. During the last few weeks, however, the character of the work has entirely changed and the surgical resources of the hospital have been taxed to their utmost limit by the number and severity of the gunshot wounds which have been brought in. For instance, on Dec. 3rd 10 wounded officers and 27 wounded men were admitted from the fight at Rhenoster Kop (Fig. 4). Most of the men belonged to the New

FIG. 4.

Arrival at hospital of patients of General Paget's column after the fight at Rhenoster Kop.

Zealand contingent, and among the officers was Dr. Chalice, a civil surgeon, who was severely wounded in the thigh and who had behaved with conspicuous gallantry. On Dec. 18th six wounded officers and 11 wounded men were admitted from Clements's Brigade at Rietfontein, and on the 21st 10 more wounded men were admitted from the same force. To-day a convoy of 25 wounded men and one officer have arrived from the Yeomanry Field Hospital at Rietfontein. All varieties of injuries have been represented both with regard to the locality of the wound and the nature of the projectile causing it. Speaking in general terms our experience has been that wounds out here heal more rapidly and satisfactorily than those seen in civil practice at home. Suppuration is rare provided early attention is given to the wounded.

Various amusements are provided for the patients. Visitors are admitted on three afternoons a week or at any time by special permission of the commandant. The band of the 2nd Lincoln Regiment, by the kind permission of Major Day, plays in the hospital grounds every Saturday afternoon, and these occasions are eagerly looked forward to by the patients. A small theatre constructed of three tents has been erected on the tennis lawn and is used for occasional concerts and for a small play which is being prepared for New Year's Eve.

December 30th, 1900.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6018 births and 3707 deaths were registered during the week ending Feb. 2nd. The annual rate of mortality in these towns, which had been 19·6, 19·1, and 17·9 per 1000 in the three preceding weeks, further declined last week to 16·4. In London the death-rate was 16·1 per 1000, while it averaged 16·6 in the 32 large provincial towns. The lowest death-rates in these towns were 10·0 in Burnley, 10·2 in Leicester, 11·8 in Cardiff, and 11·9 in Derby and in West Ham; the highest rates were 19·6 in Manchester and in Wolverhampton, 21·9 in Liverpool, 24·1 in Gateshead, and 26·4 in Norwich. The 3707 deaths in these towns included 323 which were referred to the principal zymotic diseases, against 389, 374, and 347 in the three preceding weeks; of these 104 resulted from whooping-cough, 69 from diphtheria, 56 from measles, 33 from "fever" (principally enteric), 30 from scarlet fever, 30 from diarrhœal diseases, and one from small-pox. No death from any of these diseases occurred last week in Plymouth or in Huddersfield; in the other towns they caused the lowest death-rates in Croydon, Portsmouth, Norwich, Bolton, and Burnley, and the highest rates in Nottingham, Birkenhead, Liverpool, and Salford. The greatest mortality from measles occurred in Liverpool and Sunderland; from scarlet fever in Salford; and from whooping-cough in Wolverhampton, Nottingham, and Birkenhead. The mortality from "fever" showed no marked excess in any of the large towns. The 69 deaths from diphtheria included 24 in London, eight in Sheffield, six in Liverpool, and five in Leeds. One fatal case of small-pox was registered in Newcastle, but not one in any other of the 33 large towns; three small-pox patients remained under treatment in the Metropolitan Asylums hospitals on Saturday last, Feb. 2nd, and one new case was admitted during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2037, against numbers decreasing from 2535 to 2078 on the five preceding Saturdays; 178 new cases were admitted during the week, against 156, 187, and 172 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 422 and 394 in the two preceding weeks, further declined last week to 323, and were 144 below the average. Influenza was certified as the primary cause of 15 deaths in London last week, against 20 and 17 in the two preceding weeks. The causes of 51, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Nottingham, Bradford, Leeds, and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Halifax, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 24·0 and 21·1 per 1000 in the two preceding weeks, rose again to 22·2 during the week ending Feb. 2nd, and showed an excess of 5·8 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 17·6 in Leith and 20·2 in Paisley and in Perth, to 23·5 in Glasgow and 23·6 in Aberdeen. The 695 deaths in these towns included 43 which were referred to whooping-cough, 27 to diarrhœa, 24 to small-pox, 16 to measles, seven to diphtheria, six to "fever," and three to scarlet fever. In all, 126 deaths resulted from these principal zymotic diseases, against 125 and 106 in the two preceding weeks. These 126 deaths were equal to an annual rate of 4·0 per 1000, which was 2·4 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 61 and 39 in the two preceding weeks, rose again last week to 43, and included 34 in Glasgow, three in Edinburgh, two in Dundee, and two in Paisley. The deaths from diarrhœa, which had been 22, 16, and 15 in the three preceding weeks, rose again last week to 27, of which 21 occurred in Glasgow and three in Edinburgh. The fatal cases of small-pox, which had been two, three, and 11 in the three preceding weeks, further rose last week to 24, and were all recorded in Glasgow. The deaths from measles, which had been 23 and 18 in the two preceding weeks, declined again last week to 16, of which eight occurred in Edinburgh and four in Aberdeen. The fatal cases of diphtheria, which had been six and eight in the two preceding weeks, declined again to seven last week, and included three in Glasgow. The deaths resulting from different forms of "fever," which had been two, 14, and 15 in the three preceding weeks, declined again last week to six, of which five were registered in Glasgow. The

deaths referred to diseases of the respiratory organs in these towns, which had risen from 105 to 145 in the four preceding weeks, declined again last week to 123, and were 89 below the number in the corresponding period of last year. The causes of 35, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 30·4 and 28·2 per 1000 in the two preceding weeks, further declined to 27·4 during the week ending Feb. 2nd. During the past four weeks the death-rate in the city has averaged 28·6 per 1000, the rates during the same period being 18·0 in London and 21·5 in Edinburgh. The 182 deaths belonging to Dublin registered during the week under notice were 5 less than the number in the preceding week and included 18 which were referred to the principal zymotic diseases, against 16 and 20 in the two preceding weeks; of these, 12 resulted from whooping-cough, three from "fever," two from diarrhœa, and one from diphtheria. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 1·4 in London and 2·7 in Edinburgh. The deaths referred to whooping-cough, which had been 10, 12, and 8 in the three preceding weeks, rose again to 12 last week. The fatal cases of "fever," which had been three, three, and six in the three preceding weeks, declined again last week to three. The 182 deaths in Dublin last week included 29 of children under one year of age and 44 of persons aged upwards of 60 years; the deaths of infants showed a slight decline, while those of elderly persons were considerably less than the number in the preceding week. Seven inquest cases and seven deaths from violence were registered during the week; and 63 or more than a third, of the deaths occurred in public institutions. The causes of nine, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Captain C. T. Samman has joined at Woolwich. Lieutenants A. J. McN. Cuddon-Fletcher and A. D. Jameson proceed to Aldershot for a course of instruction at the Depôt, R.A.M.C., returning to Woolwich on the completion of the course. Major Berryman is in medical charge of the *Formosa* taking troops to Malta and Egypt. Civil Surgeon J. Freeman has assumed medical charge of the troops at Plymouth, vice Lieutenant-Colonel Turner, who is granted temporary leave of absence.

SOUTH AFRICAN NOTES.

Civil Surgeon S. Sharp has been discharged from hospital to duty.

VOLUNTEER MEDICAL ASSOCIATION.

The monthly council meeting of this association was held at the head-quarters, 20, Hanover-square, on Jan. 29th, Brigade-Surgeon-Lieutenant-Colonel Andrew Clark, V.D., being in the chair. There were present Brigade-Surgeon-Lieutenant-Colonel H. G. Thompson and Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, V.D., Surgeon-Lieutenant-Colonel M. Baines, V.D. (retired), Surgeon-Lieutenant-Colonel J. Edward Squire, V.D., Surgeon-Major V. Matthews, Surgeon-Major W. Culver James, Surgeon-Captain J. Harper, Surgeon-Captain W. A. Dingle, Surgeon-Captain T. H. Dickson, Surgeon-Captain J. Cantlie, (honorary treasurer), and Surgeon-Major I. I. de Z. Marshall (honorary secretary). Amongst other business the annual challenge shield competition for this year was dealt with, the recommendations of the sub-committee being adopted—viz.:—

That all notices concerning the challenge shield competition should be sent through the brigade officer by means of a special letter to each brigade, such letter to be directed to the officer commanding the regimental district and accompanied by circulars for each regiment in his command.

That, in order to save time and expense, it is suggested that preliminary competitions should be held in each brigade to select one or more squads for the final competition and that a prize might be offered by each brigade to encourage entries.

It was agreed that the final competition be held in Wellington barracks on the first Saturday in June (the 8th). The annual meeting was fixed to take place after the council meeting on the last Tuesday in April (the 30th). The following report of a sub-committee, moved for by Surgeon-Major V. Matthews to consider the effect of the new Volunteer Act, 1900, upon volunteer medical officers, was adopted:—

That the attention of the proper authorities be called to the possible effect of the Volunteer Act, 1900, pressing unduly on volunteer medical officers, as it may necessitate their throwing up their practices if they are liable to compulsory service at long distances from their homes, as, owing to the shortness of the medical department of the regular army the volunteer medical services would, in all probability, be called out first and released the last.

It was resolved that a letter embodying the resolution be written to the Secretary of State for War. The following vote of condolence to His Majesty the King, proposed by Surgeon-Lieutenant-Colonel J. E. Squire, and seconded by Surgeon-Major W. Culver James, was carried unanimously, and was directed to be forwarded through the Secretary of State for the Home Department:—

The Council of the Volunteer Medical Association beg with all respect to offer to His Majesty the King, who as Prince of Wales was president of the association, their condolence on the irreparable loss sustained by His Majesty and by the whole empire, on the death of Her Most Gracious Majesty Queen Victoria.

GALLANTRY OF A FRENCH MEDICAL OFFICER.

According to a recent Ministerial decision Dr. Henri Mathé of the French navy has been granted special promotion on account of his meritorious services while on duty at Dakar in Senegal. The official announcement says that Dr. Mathé particularly distinguished himself by displaying exceptional qualities of initiative intelligence and devotion during an epidemic of yellow fever. "Left the only officer at the station by the demise of the commandant and his combatant staff he immediately assumed, with as much decision as coolness, the whole of the responsibilities inherent to such a situation."

THE INDIAN CONTINGENT IN CHINA.

The expeditionary force of native troops and followers sent from India to China was provided with a very liberal supply of warm clothing and it is satisfactory to find that although pneumonia has appeared among them the mortality has so far been comparatively small. It is well known that the natives of India when employed on field service during the cold season are much more susceptible to pneumonia and pulmonary disease than European troops.

Among the floral tributes received at Windsor Castle was a wreath of white flowers from the sick and wounded in the Royal Victoria Hospital, Netley. The card bore this inscription: "In affectionate remembrance of our beloved Queen from the sick and wounded soldiers at the Royal Victoria Hospital." A superb crown of white flowers with an appropriate inscription was also sent by Colonel Charlton and the military officers of the hospital. A wreath had previously been sent to Osborne House by Miss H. Norman, R.R.C., lady superintendent, and the nursing sisters at Netley.

Among the military officers who formed part of the procession from Osborne to the Royal yacht were numbered Colonel W. J. Charlton, R.A.M.C., principal medical officer of the Royal Victoria Hospital, Netley, and Major Treherne, R.A.M.C., his staff officer.

According to the *Pioneer Mail* of Jan. 11th it is reported that the 2nd Battalion, Durham Light Infantry, are to be moved from Burma to Wellington, pending their departure home with a view to an improvement of the state of health of the regiment. The 1st Battalion, Royal Fusiliers, at Nasirabad will proceed to Burma.

Correspondence.

"Audi alteram partem."

THE SOUTH AFRICAN HOSPITALS COMMISSION.

To the Editors of THE LANCET.

SIRS,—Considering the circumstances which surrounded the birth of this Commission—the essentially technical character of the inquiry as originally proposed, the tergiversation of the Government on its composition and scope, its subsequent extension on both headings, the tone of some of the speeches in the House of Commons, the animus against medical men and the absence upon it of any member with knowledge of

the service, its regulations and requirements, to which you draw attention in the leading article in THE LANCET of Feb. 2nd, p. 338—the Royal Army Medical Corps may rest thankful for the lines on which this inquiry has been carried out, for the impartiality shown, and for the conclusions arrived at. Tersely put it may be said that the defects brought to light touching the well-being of the sick and wounded range themselves under imperfections in the organisation of the corps and deficiency of materials, the exigencies of war and the absence of sufficient transport; and, in respect to the first, quite preventable, it is abundantly clear that the responsibility rests with the sections of the War Office concerned with the points in question. And when we note the nature of the defects shown in the field under the pressure of military operations we recognise how closely they fit in with the known imperfections under which the corps laboured during peace and from which those having practical experience feared the results which have followed. A corps reduced to a numerical strength not even sufficient for peace requirements, with, so far as our officers were concerned, a *paper* reserve, deprived of all stimulus towards personal efficiency and professional progress, with deficient material to work with and practically no opportunities for practising during peace the demands of war, necessarily was unable to meet the onerous burden of a large war, yet showed the value of its component parts and the ability and energy of the majority of its *personnel* as, when supplemented by a strong civil contingent of officers and men and by private help, allowed the Commission to conclude that "it cannot be properly said that the medical and hospital arrangements have broken down; there has been nothing in the nature of a scandal with regard to the care of the sick and wounded, no general or wide-spread neglect of patients or indifference to their sufferings, and all witnesses of experience in other wars are practically unanimous in the view that taking it all in all in no campaign have the sick and wounded been so well looked after as they have been in this." One bubble which has been pricked is the asserted existence of an army reserve of medical men in the auxiliary forces or otherwise, and another, apparently relied on by the military coterie, is the hitherto asserted competency of the civil section adequately to take the place of a trained army medical staff.

To enter further into details would occupy too much of your valuable space. Suffice it to say, that the business-like recommendations of the Commission even better emphasise the defects elucidated than the narration of the work undertaken; while on the three main points of the desirability of the conditions of service being such as to draw good professional men and ensure the maintenance of their qualifications at a high level, advancement for merit rather than by seniority for the upper ranks, and the production of good sanitarians in the Royal Army Medical Corps, they do but repeat the recommendations of the Crimean inquiry, and so land us exactly where we then were, with the whole of the sad experience then culled and the good intentions then formulated wasted and annulled in the interval by those to whom the well-being and efficiency of the medical section of army work was entrusted. In point of fact, the nation is again asked to do in 1901 what it was asked to do in 1858, what with the best intentions it proposed to do, but which it utterly failed to bring to good effect through its negligence to watch over the acts of its officials; and the pressing present question is, Will it do any better now and in the future?

The Commission merely indicate the lines along which progress should run and suggest another committee—departmental or otherwise—to formulate the necessary details, and hence its accomplished work is but the primary step in the scheme to be evolved. It is apparent that the composition of this committee is all important, as with it rest the power of laying down the measures essential towards giving due effect to the recommendations made or, on the other hand, frustrating the attempt now again made to evolve an efficient medical corps capable of doing the highly important duties entrusted to it—duties now clearly placed before the public and after this committee has drawn up a course of action calculated to effect the objects desired it will rest with the War Minister to embody this outcome in a royal warrant or otherwise. And this third step satisfactorily accomplished the crux of the scheme, the pivot on which the entire previous labours will turn for good or evil results, will be arrived at as embodied in the questions: What guarantee have we that the decisions arrived at will be respected and not whittled away or ignored as in the past? Where resides the power capable of giving full effect to them?

The unfortunate position of the Royal Army Medical Corps is that it is dependent for good working on so many sections of the War Office, any one or all of which may adversely influence it; and what is wanted is an emancipation of the corps from these trammels so that it may be free to perfect itself in accordance with its known wants from a professional standpoint and on a business basis. Clearly, much remains to be done before a successful issue is arrived at.

I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel (retired), Medical Staff.

Brandram-road, Lee, Feb. 4th, 1901.

"SELENIUM COMPOUNDS AS FACTORS IN THE RECENT BEER-POISONING EPIDEMIC."

To the Editors of THE LANCET.

SIRS,—Since the publication of our last note[1] upon this subject we have continued our work in this direction, and have been able to demonstrate the presence of selenium in brewing sugar and beer, the only source of which is the impure sulphuric acid used in the manufacture of the sugar. The brewing sugar in addition to selenium contained arsenic. We may say incidentally that this sugar was not manufactured by the firm implicated in the recent epidemic. The beer we examined we obtained through the kindness of Sir Lauder Brunton, and it was one which was undoubtedly concerned in the beer-poisoning epidemic. We are at present occupied in the quantitative estimation of the selenium in both these substances.

With regard to the pharmacological action of selenious acid the recent results obtained by O. Modica[2] are of especial interest in this connexion. This observer, while confirming the results of Czapek and Weil[3] concerning the similarity of arsenious and selenious acid with regard to acute poisoning, points out that the symptoms of chronic poisoning which they produce are not by any means so similar. For instance, whilst wasting in animals chronically poisoned by arsenic practically never occurs, in chronic selenious acid poisoning it is never absent. Further, in animals tolerance to continued small doses of arsenic is easily obtained. This is not so in the case of selenious acid.

We are, Sirs, yours faithfully,

F. W. TUNNICLIFFE, M.D., M.R.C.P. Lond.,
Professor of Materia Medica and Pharmacology in King's College, London),
OTTO ROSENHEIM, Ph.D., F.C.S.
King's College, London.

THE ADAPTABILITY OF CLOVER'S INHALER.

To the Editors of THE LANCET.

SIRS,—This well-known inhaler has, with slight modifications, held its own for many years in the administration of ether and when fitted with a tap at the free end of the bag is frequently used for giving nitrous oxide prior to etherisation. It does not appear to be generally known that a Clover's inhaler *without the bag* is safe and effective for administration of chloroform or of mixtures of chloroform and ether. (Chloroform pure or in a mixture must never be given with the bag on, as this is practically a closed method, and to give chloroform by such a method is simply tempting Providence.) Within the last few years McArdle has drawn attention to the utility of this method in giving Tait's mixture, which consists of chloroform one part and ether two parts, for gynæcological work. With slight modifications in the method of administration, I find it equally useful for administration of chloroform alone and other mixtures of chloroform and ether. The following mixtures are of service:—

	Chloroform.	Ether.
For a healthy man	2 parts	1 part
For a feeble man	1 part	1 part
For women and children	1 part	2 parts (Tait's mixture).

The chloroform and ether are best kept in separate bottles

[1] THE LANCET, Feb. 2nd, 1901, p. 318.
[2] Archiv. Farm. e Terap., Palermo, vol. v., 1897, p. 61.
[3] Archiv für Experimentelle Pathologie und Pharmacologie, xxxii., 1893.

and the mixture measured out as required. In giving chloroform alone I start with one ounce of the anæsthetic in the chamber and with the indicator at 0. After a few breaths the indicator is gradually moved to midway between 0 and 1 and then slowly and by regular gradations advanced up to 3. This occupies five or six minutes. The indicator is then kept at 3 until complete anæsthesia is induced, generally in another four or five minutes, and for the rest of the administration it is moved back and kept between 1½ and 2 as may be found necessary. In giving mixtures of chloroform and ether one and a half ounces of the mixture are poured into the chamber and the same method holds good, except that to induce anæsthesia the indicator must be advanced to Full and after production of complete anæsthesia kept between 2 and 3. The greater the proportion of ether in the mixture the nearer will the indicator have to be kept to 3. Mixtures of chloroform and ether require from 10 to 12 minutes for production of complete anæsthesia. Having the anæsthetic in a reservoir which has to be replenished about twice in the hour is very superior to the constant bottle-tilting or ball-squeezing which is inseparable from the open and Junker methods and is very readily appreciated by anyone who has often to administer anæsthetics for three or four hours on end. The same precautions and the same watch on the pulse, respiration, and pupil are necessary in this as in any other method of administration. I have practically given up the dropping on lint method for the Clover's inhaler without the bag, except in those operations on the face or mouth which would foul the interior of the Clover's inhaler with blood. There is a great advantage in a simple apparatus which can be used equally well for nitrous oxide, ether, nitrous oxide and ether, chloroform, and chloroform and ether mixed.

I am, Sirs, yours faithfully,

C. HAMILTON WHITEFORD, M.R.C.S.Eng., L.R.C.P.Lond.,
Hon. Anæsthetist to the South Devon and East Cornwall Hospital.

Plymouth, Feb. 4th, 1901.

"WHAT IS 'COGNAC BRANDY'?"

To the Editors of THE LANCET.

SIRS,—My attention has been directed to a joint letter of Messrs. Hennessy and Martell which appeared in THE LANCET of Feb. 2nd, p. 358, relating to an action in which my company is concerned and to my evidence therein. The report of the case in the Dublin journals upon which Messrs. Hennessy and Martell's letter is based was incomplete and in material respects inaccurate. No shorthand writer was available at the hearing to take a verbatim note. As the case is under appeal I refrain from discussing its merits and will only at present deal with certain facts given in evidence so far as rendered necessary by the letter you have inserted.

It was stated in evidence that my company's predecessors sold and invoiced the brandy in question at 42*s.*, not as "cognac" but merely as "brandy." The plaintiff's counsel, in spite of three distinct suggestions by the Lord Chief Justice, refused to amend his pleadings in this sense and insisted that "brandy" necessarily meant "cognac" (ignoring the existence of Australian, Californian, Spanish, and other brandies), and further insisted that brandy must be exclusively the produce grown in the commune of Cognac. In my evidence I stated that pure cognac should be the produce of the two Charentes, but plaintiff's counsel insisted upon his limitation, and I therefore, in the "lamentable ignorance" referred to by your two correspondents, did state—and I adhere to the statement—that brandy made exclusively from grapes of the commune of Cognac did not exist on the market. Messrs. Hennessy's and Martell's names were not introduced by me into the case, but when asked specifically I did state that at equal prices the brandies of all cognac shippers, including those of the two firms named, were practically made in the same manner. That statement was not intended, and I submit is not calculated, to reflect upon them, and I should be sorry if it were considered otherwise.

Passing from the personal part of the matter to the larger question, namely, the interest of the British public—in which the named firms stated that they addressed you—may I be permitted to state that I visited the two Charentes before and since the destruction of the vineyards by the phylloxera and claim to have, in spite of the suggested "lamentable ignorance," not only a knowledge of the Cognac district, but also of its products as shipped before and since the stated period. I concur that last year the Charentes have produced—for the first time in 22 years—cognac in appreciable quantities. Your correspondents are silent as to the failure of such production during the preceding 22 years; they point out that there is "now" offered on the market Cognac brandy of the last vintage at prices less than those of the ante-phylloxera period, but do they suggest that the brandy of the last vintage—made a few months ago—is now offered to, or available to, the public for present consumption? Your correspondents are also silent as to the large quantities of brandy shipped from the Charente during the 22 years succeeding 1878—the year of the devastation of the vineyards—until last year's bountiful vintage. I have it on the authority of eminent cognac shippers that the production of wine in the Charente in 1877 was about 15 000 000 hectolitres; that in 1878, when the vineyards were generally attacked, the yield was reduced to about 6,000,000 hectolitres; that in 1879 and 1880 there was a further reduction; and that between and including the years 1881 to 1890 the yield was insignificant. Yet in 1879, the year following the destruction of the vineyards, there was a record exportation of brandy from Charente—viz., some 500,000 hectolitres—which doubtless consisted largely of old stocks; but it is curious that during the years 1881 to 1890 when the yield was insignificant the exportation did not materially decrease, being about 300 000 hectolitres annually. It is significant that during that period and since large quantities of spirits from other parts have been imported into the Charente, and at the trade auction sales in London for a number of years large quantities of brandy shipped from the Charente were sold as to the greater part from 25 to 75 per cent. less than the prices quoted by Messrs. Hennessy and Martell for the new vintage of last year, in fact as low as 1*s.* 8*d.* per gallon. Putting aside the new brandy of last year's vintage, are the brandies shipped as stated from the Charente during the last 22 years, even as to a moderate proportion, the "good and pure cognac available at moderate prices" referred to by your correspondents?

I am in complete sympathy with the ostensible objects of the syndicate recently formed in the Charente for the protection of "cognac." It is to be hoped that the syndicate will ensure that what is shipped from the Charentes as "cognac" contains no spirit other than that produced from grapes of the Charente, and that if such is blended with any other spirit the product is not shipped as "cognac." I stated in my evidence that pure cognac of a suitable age for present consumption—not last year's vintage—and without any admixture of other spirit cannot at present be obtained under a comparatively high price, and I consider that it is in the interest of the public as well as in that of shippers of genuine cognac that this fact should be well understood.

In asking you in fairness to my company to insert this letter I apologise for trespassing at such length on your valuable space and—Remain, Sirs, yours faithfully,

F. B. EHRMANN,
Managing Director, Ehrmann Bros., Ltd.

Finsbury-square, London, E.C., Feb. 4th, 1901.

THE RÔLE OF ARSENIC IN THE RECENT EPIDEMIC OF PERIPHERAL NEURITIS.

To the Editors of THE LANCET.

SIRS,—With regard to a paragraph in a leading article in THE LANCET of Feb. 2nd, p. 341, in which you suggest the possibility of the rôle played by arsenic in the recent epidemic of peripheral neuritis being challenged, may we be permitted to draw your attention to our articles in the *British Medical Journal* of Dec. 1st and 8th, to Major Ronald Ross's letter in THE LANCET of Dec 8th, 1900, p. 1677, and to Dr. Prytherch's remarks at a meeting of the Liverpool Medical Society, as reported by you in THE LANCET of Jan. 5th, 1901, p. 33? We have from the first opposed the idea of the wholesale poisoning by arsenic and our opinions are not modified in the least degree. With apologies for troubling you,

We are, Sirs, yours faithfully,

W. A. NEWALL
J. R. PRYTHERCH.

Chester, Feb. 5th, 1901.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Increase of the Plague.

THE feature of the week has been the marked development of the plague epidemic in Bombay city and the evident signs of a recrudescence in the sister city of Calcutta. For the whole of India during the week ending Jan. 5th there were 2453 deaths from plague, compared with 2296 during the previous seven days, and with 1386 during the corresponding week of last year. In Bengal there was an increase from 1374 to 1500. There were 414 deaths from plague in Mysore, 281 deaths in the Bombay Presidency, 171 in Bombay city, 67 in Calcutta, 25 in the Madras Presidency, 14 in the Hyderabad State, and 11 in the Punjab. In Bombay City the increase was from 982 to 1119. In Bengal the Patna district returned 821 deaths, Sarun district 385, Monghyr 194, Gaya 99, and Howrah one. The increase in Calcutta is greater than the figures show, partly because a much larger proportion of deaths have during the past week been returned as due to plague (whereas previously so-called suspected deaths formed a greater portion of the total figures), and partly because there is probably more plague than is officially reported.

Greater effort should be made to popularise inoculation in Calcutta. The operation is accepted in the other plague affected districts of Bengal under the influence of Major Sunder, I.M.S. In the Punjab it has been vigorously pushed and apparently with great success. The prophylactic is not being sought for much at the present time in Bombay City, notwithstanding the threatened outbreak, but a very large number of inoculations have been already done there.

The hospital ship *Gwalior*, after some additional medical fittings, will sail again for China, probably about the 30th.

There is no further diminution in the famine returns; indeed, in some places there is a slight increase.

Jan. 12th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Death of the Queen.

MATTERS of local interest have lately given place to the all-absorbing details connected with the lamented death of Queen Victoria. Loyalty and devotion to her memory have been displayed widely in profound grief and universal mourning. The late Queen was patron of the Queen's Hospital. Her interest was also generously shown by the opening of the Jaffray Hospital by the Prince of Wales and of the laying of the foundation-stone of the General Hospital by the Duke of York as her representatives. Her Majesty in her own person laid the foundation-stone of the law courts which bear her name in this city. On Jan. 10th only a statue of Her Majesty—the gift of a Birmingham citizen, Mr. Barker—was unveiled in the centre of the town amid the acclamation of a large crowd. The enthusiasm of this tribute to the celebration of her Diamond Jubilee had hardly died away when the news of her illness and unexpected death reached our ears. Ere the echo of rejoicing had died away there came the sound of lamentation and a sense of profound sorrow. Happily this was mingled with national pride in our Queen's long and glorious career, the record of which will remain in history as an example of a monarch whose life was devoted to the interests and welfare of her people.

Walter Myers, B.Sc. Lond., M.A., M.B. Cantab.

Dr. Myers, whose life has been yielded to the cause of science in a sad manner, was a Birmingham student who after obtaining high academic distinction was selected by the Liverpool College to go abroad for the purpose of studying tropical diseases. At Parà he contracted yellow fever, to which he succumbed. At Cambridge he obtained a natural science scholarship at Caius College and after a distinguished career took the degrees of Master in Arts and Bachelor in Medicine. Ardent and devoted to his studies, painstaking and accurate in his observations, with prospects of a brilliant course open to him, he fell a martyr to progress. Much sympathy is felt in the city for his parents, of whom he was an only son.

The Hospital for Sick Children.

The fortieth annual meeting of the governors and subscribers to this institution was held on Jan. 28th, under the presidency of the Lord Mayor (Alderman Edwards). The report read was a very satisfactory one. The number of patients treated last year was 14,829, of whom 13,535 were out-patients, and the death-rate was 7·9 per cent. As usual, the committee deplored a deficiency in the balance-sheet, the income falling short of the expenditure by £590. The new operating theatre and reception rooms have been finished and already have proved an inestimable advantage.

The Prosecution of Druggists.

At the police-court on Jan. 18th a local firm of druggists were heavily fined. One summons was for selling tincture of benzoin which was not of the nature, substance, and quality demanded, and another was for selling camphorated oil which only contained 78 per cent. of the quantity of camphor contained in camphorated oil prepared according to the British Pharmacopœia. As usual, much conflicting evidence was adduced, and the question of employing unqualified assistants to dispense was brought to the front. After some strong remarks from the bench a fine of £20 and costs was inflicted in each case.

Feb. 5th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Magisterial Decisions in Cases arising out [of] Arsenic Poisoning by Beer.

Two decisions given by the stipendiary magistrates at the city and county police-courts a few days ago are distinctly opposed to each other. At the Manchester City Police-court Mr. Headlam said the defendant was "summoned for selling beer to the prejudice of the purchaser, such beer not being of the nature, substance, and quality of the thing demanded." This was under the sixth section of the Sale of Food and Drugs Act. The beer contained arsenic. Mr. Moulton had argued that arsenic being an ingredient injurious to health the summons should have been taken out under the third section, the article sold being really beer into which, through no fault and without the knowledge of the defendant, arsenic had been introduced. But a summons under the third section must have failed because knowledge of the fact on the part of the vendor is essential to a conviction. But Mr. Headlam was of opinion that the defendant could be convicted under the sixth section, which was passed in the interests of the purchaser, "and it is not required that the vendor should have knowledge of any adulteration in the article purchased." The vendor can, however, protect himself by obtaining a warranty from the person who supplies him with the article. He said that it would be an extraordinary thing that a person who unknowingly sells milk with water in it should be liable to a penalty, while one "who unknowingly sells beer with arsenic in it should be allowed to go free." He convicted the defendant and imposed a fine of 40*s*. An appeal was allowed. At the Manchester County Police-court Mr. J. M. Yates, K.C., the stipendiary magistrate, in a similar case gave an opposite decision. He said that beer containing arsenic had been purchased from the defendant and the quantity was admittedly such as to be prejudicial to health. A summons was taken out under the Sale of Food and Drugs Act, 1875, Section 6. For the defendant it was contended that Section 6 did not apply, but that proceedings should have been taken under Section 3. It was proved that he was ignorant of the adulteration, that he could not with reasonable diligence have ascertained it, and that he had no reason or grounds for suspicion. But Section 3 supposes knowledge of the adulteration, so that defendant could not be convicted under that section. Section 5 provides that the seller of the article of food is not liable to conviction if he sells in ignorance of the adulteration and could not with reasonable diligence have obtained the knowledge. Here, again, the facts show that under this section the defendant ought not to be convicted. It was contended that he was liable to conviction under the sixth section, which is that "no person shall sell to the prejudice of the purchaser any article of food which is not of the nature, substance, and quality of the article demanded, &c." But the defence to this is given by the twenty-fifth section, that he sold the article as he bought it and that he had a

written warranty that it was of the nature, substance, and quality of the article demanded. Mr. Yates thinks that the legislature intended to make a difference between an adulteration of a harmless nature, as of milk with water or the abstraction of cream from milk, and an adulteration with substances prejudicial to health. In the former case an inferior article of food is sold. According to this view Sections 3, 4, and 5 codify the law as to adulteration that is prejudicial to health, and Sections 6, 7, 8, 9, and 25 the law as to adulteration that is other than prejudicial to health. "In this case," he said, "Section 3 mostly applies to the facts in evidence here. ..... Such being my opinion, I dismiss the summons, and I do so more readily as whoever may be to blame the one least of all to blame is the beer retailer." With this last opinion we all probably agree, and so the burden of responsibility is thrown back on the brewer, from him on the manufacturer of glucose and "inverts," and from him to the maker of sulphuric acid. There is to be an appeal in this case as in that before Mr. Headlam. The ultimate decision is important, as each stands for many others. Possibly learned judges may be able to bring order out of the apparent chaos of the Sale of Food and Drugs Act.

Manchester Royal Infirmary.

At a meeting of the Manchester Infirmary Board on Jan. 28th the chairman, Mr. E. S. Heywood, said that it was the last meeting for which he was appointed to act as chairman. He had held this position for 25 years, but did not wish to be re-elected to it, as he did not feel equal "to the heavy obligations which the duties of the position imposed." Mr. W. I. Crossley expressed the very great regret with which the board had heard Mr. Heywood's decision. His kind manner had endeared him to every member of the board "and the parting would cause a great pang." Mr. Heywood's retirement from the chairmanship of the board will, I am sure, be regretted by every member of the medical staff. Questions have to be considered from time to time which give evidence of differences of opinion between the board and the staff, but through all the discussions and controversies that have arisen the uniform courtesy and kindness and the characteristic fairness of mind which Mr. Heywood has always displayed have done much to render the intercourse between the lay and the medical authorities agreeable and beneficial. It may be hoped that his knowledge of infirmary problems and his wise judgment may long be given to the institution. At the same meeting the board confirmed a recommendation from the House Committee that "as an experiment 'kosher' food for Jewish inpatients should be provided for one year, under such restrictions as might be considered necessary."

Jewish Hospital Scheme.

A public meeting of the subscribers and supporters of the proposed Manchester Jewish Hospital was held on Feb. 3rd. The chairman said that the committee intended to have the name of Victoria "England's late beloved Queen," connected with the hospital. He said that the concession of the infirmary as to "kosher" meat did not satisfy him and it was evident that it did not satisfy his audience. "Nothing would satisfy them until they had succeeded in establishing in their midst a Jewish hospital for the requirements of a large portion of the community of Manchester." They would require, he said, £6000 to build a hospital with 20 beds, £2000 for equipment, with at least £1500 or perhaps £2000 per year for maintenance. Dr. N. C. Haring moved a resolution to the effect that such a hospital was an "absolute necessity" and pledging the meeting to support the scheme. This view was taken by Dr S. Finklestein who said that Jewish medical men could fill the hospital with cases coming under their notice. The resolution was carried unanimously. Up to the present a sum of £174 has been subscribed, so that the promoters still have the hill before them.

The Ashton Infirmary.

The Ashton-under-Lyne District Infirmary has just received a bequest of £10,000 from the trustees of the late Mr. Holden of Mossley and Oldham. Special privileges are given in the bequest to the borough of Mossley. Part of the money will be appropriated to the establishment of a nurses' home at the infirmary. The Nursing Association's nurses can then go to cases in the surrounding districts, such as Ashton, Stalybridge, and Dukinfield, and live at the home, "whilst six additional nurses could be provided to meet a greatly felt want—viz., to nurse middle-class people who would be willing to pay 15*s.* or 20*s.* per week for their services if they could be spared the inconvenience of maintaining the nurse in the house." These places really form one town, and such a scheme, if found in working to be practicable, would no doubt be a great boon to many who cannot afford the expense of a nurse in the house and who in probably the majority of cases have not the necessary sleeping accommodation to lodge a nurse.

Salford Royal Nurses' Home.

The Salford Royal Nurses' Home, established to commemorate the Diamond Jubilee of our late beloved Queen, was formally opened on Jan. 26th. The advisability of postponing the ceremony had been discussed, but it was decided that it should take place as had been arranged. The movement for its establishment was set on foot by the then mayor, Sir Richard Mottram, in 1897. He was thought too sanguine in expecting to raise the £10,000 required, but it has been done, and as chairman of the committee he has had the satisfaction of being able to hand it over fully equipped for its useful purpose entirely free from debt and without one penny of "chief rent" upon it. The deeds and a letter from the Home Secretary authorising the home to be styled "Royal" were handed by Sir Richard Mottram to Dr. T. Arthur Helme, honorary secretary of the Sick Poor Nursing Institution. Lady Mottram then declared the Home open. In moving a vote of thanks to Lady Mottram, the Bishop of Manchester paid a touching and eloquent tribute to the memory of our late Queen and thought that Lady Mottram in her "labours for the erection of a home for the nurses of the sick poor had been working entirely in harmony with the feelings of the Queen and of the spirit of the age."

Small-pox Hospital for Manchester.

The Sanitary Committee of the corporation recommends the council to propose terms to the Salford Corporation for the purchase of a site in Drinkwater Park, Salford, for the erection of a joint small-pox hospital for Manchester and Salford. It is a difficult, one may say an impossible, task for towns to provide small-pox hospitals without exciting deadly opposition. This scheme will no doubt do so and yet it seems at first sight as little open to objection as any that can be devised and certainly has some advantages over the Carrington Moss scheme.

Feb. 5th.

WALES AND WESTERN COUNTIES

(FROM OUR OWN CORRESPONDENTS.)

A Plague-infected Vessel at Bristol.

THE medical officer of health (Dr. D. S. Davies) of the city of Bristol is fully alive to the possibility of the spread of plague from the *s.s. Rembrandt* upon which plague-stricken rats were recently found. About 100 persons who have been connected in one way or another with the vessel are being daily visited either by Dr. Davies or by his deputy, Mr. J. C. Heaven.

Lampeter Workhouse.

The prosperous condition of the labouring classes at the present time and therefore the absence of able-bodied men and women from the workhouses is significantly shown in a report which the medical officer of the workhouse recently presented to the Lampeter Board of Guardians in which he stated that, excluding the children, all the inmates were suffering more or less from mania, idiocy, imbecility, or hypochondria.

Carmarthen Lunatic Asylum.

The lunatic asylum at Carmarthen serves the three counties of Carmarthenshire, Pembrokeshire, and Cardiganshire, which at the last census had an aggregate population of about 290,000 persons. In his annual report to the joint visiting committee Dr. E. Goodall states that at the end of last year there were 633 patients in the asylum, including 40 private patients. During the year 1900 76 patients died, an increase in the number recorded in previous years, which is said to be due to an epidemic of influenza. The total number of patients admitted during the year was 116, and 16 of these were private patients. The average weekly cost of each patient was 9*s.* 7¼*d.* The visiting committee has decided to engage three additional male attendants and upon their appointment there will be an average of 12 patients to each attendant.

Sanitary Inspectors' Association of South Wales and Monmouthshire.

The Sanitary Inspectors' Association of South Wales and Monmouthshire which was established three years ago held its annual meeting at Aberdare on Jan. 26th. The association has a membership of 105 inspectors and of 74 other persons who are interested in public health matters. The discussion which followed the reading of a paper upon House-to-House Inspection at Aberdare indicated the existence of a full sense of their responsibilities by those who took part in it. Such associations as these ought to do a great deal towards abolishing the nuisance inspector whose office is often a sinecure. That the Local Government Board are anxious to have competent men appointed is well known, and in the case of the appointment of an inspector at Whitland in Carmarthenshire the Board has written to the district council asking for evidence of competency as the testimonials submitted to the Board referred only to character and not to qualification for the position.

Newport and Monmouthshire Hospital.

The financial position of the Newport and Monmouthshire Hospital is in marked contrast to that of many similar institutions. The income—£3041—last year fell short of the expenditure only by £31. There were treated during the year 540 in-patients and 2320 out-patients, and 1266 patients were visited at their homes. It was stated at the annual meeting of the subscribers to the hospital, which was held at Newport on Jan. 31st, that the cost of this home visiting amounted to about £500 yearly, and in view of the fact that in the new building there will be twice as many beds as there are in the present hospital, with a corresponding increase in the expenditure, the directors advised the discontinuance of this branch of the institution. Many subscribers were very much averse to giving up the home visiting, and after some discussion it was ultimately decided that it should be continued only until the opening of the new building. A pleasing feature in the report of the directors was contained in the statement that £1000 had been contributed by the workmen's committee. Three wards in the new hospital are to be completely furnished by Lord Tredegar, Alderman H. J. Davis, the chairman of the board of directors, and Alderman Thomas Jones.

Wage Limit at the Plymouth Royal Eye Infirmary.

The committee of the Plymouth Royal Eye Infirmary recently decided that single men earning more than 18*s.* weekly and married men earning over 30*s.* weekly should be ineligible for treatment at the institution, a plan which could with advantage be followed by other medical charities. The Plymouth District of Oddfellows, however, do not approve of this procedure, for at their annual meeting held on Jan. 28th it was decided to reduce their donation to the infirmary in consequence.

Bath Royal United Hospital.

The annual meeting of the subscribers of the Bath Royal United Hospital was held on Jan. 31st under the presidency of the mayor. The medical report stated that 1384 in-patients were admitted during 1900, against 1289 in 1899. The out-patients numbered 9151, an increase of 210 as compared with the preceding year. The financial statement was unsatisfactory, showing that the deficit of £1100 with which the year 1900 commenced had been increased to £3200. Sanitary improvements in the institution had caused a considerable expenditure. The cost of each bed was estimated at £52 per annum.

Plague in Cardiff.

A case of plague was notified to the Cardiff medical officer of health on Tuesday, Jan. 29th, and the patient, a married man, 38 years of age, died at his own home on the evening of the following Thursday. Dr. W. G. Savage, the bacteriologist to the Cardiff and county public health laboratory, on Tuesday obtained specimens of the patient's blood and after bacteriological examination he was able to report on Thursday morning that the disease was plague. On the same day the culture and fresh material were sent to Dr. Klein who on Sunday confirmed the positive diagnosis of Dr. Savage. Dr. Rees, one of the medical inspectors of the Local Government Board, visited Cardiff on Saturday and Sunday. It is stated that in the vicinity of the works, which are situated near the docks, where the patient was employed a very large number of dead rats have lately been found and that it had been part of his work to collect and destroy the carcasses. When the last case of plague occurred in Cardiff in October last the chairman of the health committee and the medical officer of health were empowered to take any steps they might think desirable for dealing with an outbreak of the disease. They have therefore decided that all men employed in mills or works adjoining the docks shall be medically examined by Dr. Walford who will have the assistance of several other medical practitioners in the town.

Arsenic in Beer at Merthyr.

In the Merthyr Police-court on Feb. 4th the Glamorgan County Council proceeded under Section 6 of the Sale of Food and Drugs Act, 1875, against a publican who had supplied beer which was found to contain one-sixth of a grain of arsenic per gallon. The medical officer of health of Merthyr, Dr. C. E. G. Simons, stated in his evidence that among the workmen employed at the brewery from which the beer was supplied there had been several cases of arsenical poisoning. The stipendiary magistrate imposed a fine of £5 and ordered the defendant to pay the costs.

Feb. 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Glasgow.

ABOUT the middle of last week there seemed some reason to believe that the epidemic of small-pox had spent its force, but more recent reports contradict this hopeful anticipation. On Feb. 2nd it was announced that 16 new cases had been admitted to hospital, three had been dismissed, and one had terminated fatally. The number of patients then under treatment was 407. The report on Feb. 4th shows 21 new cases and two dismissals, making the present total 428. In his official report to the corporation Dr. A. K. Chalmers attributes the rapid extension of the disease to the free movement of mild and unrecognised cases which would so easily and extensively occur during the holiday season. In the period from Jan. 13th to 21st, 256 persons were attacked with the disease, this great epidemic virulence corresponding with an added incubation stage of from 10 to 14 days to the opportunities for exposure afforded by the New Year holidays. A further factor is the insufficient vaccination of large sections of the population. As far back as June last the health committee, in view of the then distribution of small-pox, issued a recommendation advising revaccination and offered to pay a fee to practitioners for every case. This advice, however, fell for the most part on heedless ears. Dr. Chalmers considers that, whilst the rush of cases created by the holiday period has passed, a secondary increase of cases is likely to occur at a period corresponding to infection on Jan. 17th, the day on which the maximum amount of infection is known to have been present among the population. In connexion with the subject of revaccination the medical officer draws attention to the fact that during the epidemic the members of the Postal Service, who have necessarily been brought into contact with the infected areas and who are all compulsorily revaccinated, have enjoyed complete exemption from the disease.

Glasgow Maternity Hospital.

The annual report for the past year shows a considerable increase in the work of the hospital and it is becoming evident that the directors will ere long have to face a demand for increased accommodation. Last year the experiment was tried of adding two ladies to the directorate and it is now reported that the result has been a singularly happy one. During the year 116 medical students were enrolled and 42 nurses received a training in obstetric nursing. Dr. Alexander Robertson, who has for many years been one of the most active directors of the hospital, has intimated his resignation. Dr. J. M. Munro Kerr has been appointed one of the obstetric physicians to the hospital and Dr. A. W. Russell one of the assistant obstetric physicians.

Glasgow Eye Infirmary.

The annual meeting of the contributors to the infirmary was held on Jan. 31st. Sir James King, Bart., in moving the adoption of the report, referred to the resignation of the senior surgeon, Dr. Thomas Reid, who has for nearly 40 years been a member of the hospital staff. On behalf of the directors he expressed a very hearty appreciation of Dr. Reid's services, and cordial good wishes for his happiness and welfare. The in-patients admitted during the year

numbered 1448 and the out-patients 18,478. From the report it appears that in 149 cases an eye was removed; in three of these the operation was demanded by an injury resulting from the use of a fork to untie a bootlace; and in nine the eye was lost in consequence of blows inflicted by a fist. The directors gratefully acknowledge various legacies, including one for £1000 from the trustees of the late Professor P. A. Simpson, M.A., M.D., who formerly occupied the chair of Forensic Medicine in the University of Glasgow.

Glasgow Royal Infirmary.

Each week seems to bring some new difficulties or dispute in connexion with the reconstruction scheme. The most recent is a difference of opinion which has manifested itself between the infirmary managers and the Jubilee Memorial Committee on the question of financial responsibility. The managers, as stated in this column last week, wrote accepting the scheme and plan adopted by the committee on the understanding that they were not involved in any financial responsibility. But when this communication was submitted to the Memorial Committee on Feb. 1st it produced an explosion of indignation. Sir David Richmond, in a lengthy speech, moved that the managers' letter be not accepted, and this was passed unanimously. In speaking on the motion Sir David Richmond described the position of the managers as an attempt to absolve themselves of their proper responsibilities and characterised their proposal as an audacious one. The Jubilee Committee had raised £100 000 and now offered to re-build a certain section of the infirmary. When that was performed their function ceased and the managers must rely on their own resources. This view appeared to find general acceptance with the committee, but the public are inclined to ask: If the committee only contemplated a partial action why did they invite a number of architects to submit plans for a complete reconstruction—plans which it would now appear they never had any intention to carry out? The committee have appointed a deputation to confer with the managers with a view to establish a *modus vivendi*, and have determined to issue a statement of their case so as to regain public sympathy. It is not difficult to understand the present confusion and conflict when it is remembered that the promoters of the plan launched their scheme without any consultation with either the managers or professional staff of the infirmary.

Feb. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

A Central Laboratory for the Irish Asylums.

THE Chief Secretary for Ireland on Jan. 29th received a conjoint deputation from the Royal Academy of Medicine in Ireland and the Irish division of the Medico-Psychological Association of Great Britain and Ireland, with reference to the project of establishing a central laboratory, devoted to pathological research in connexion with insanity, for the asylums of Ireland. The object of the deputation was to request the good offices of the Chief Secretary with a view to affording asylum committees the power, which they do not now possess, to contribute to such an institution, the idea of which has met with general approval not only from the medical profession, but from the daily press, both Unionist and Nationalist, and from various influential members of Parliament on both sides of the House. The deputation consisted of Dr. Lombe Atthill (President of the Royal Academy of Medicine in Ireland), Professor D J. Cunningham, F.R.S., Sir Christopher Nixon, Mr. A. D. O'C. Finegan (secretary of the Irish division of the Medico-Psychological Association), Mr. Conolly Norman, and Dr. W. R. Dawson.

Dr. Atthill, having introduced the deputation, referred to a general statement of its objects, which had already been laid before the Chief Secretary, and said that they were there to afford him any additional information that he might desire.

Sir Christopher Nixon then spoke at some length on the desirability of a central laboratory for the Irish asylums, explaining that it was to be of a similar nature to the laboratories already established by the London County Council for their asylums and by the Scottish asylums at Edinburgh. He thought that it ought to be done thoroughly and that the estimate made by Dr. Dawson of about £600 a year was not enough to allow for its support.

Professor Cunningham pointed out that he understood that the laboratory of the Scottish Asylums was only costing about £600 a year. Ireland was very badly off for laboratories for pathological research as compared with the sister kingdom and he hoped that the Chief Secretary would see his way to assisting in the matter.

The Chief Secretary expressed complete approval of the project of establishing the laboratory. He thought that perhaps the strongest argument in its favour was the existence of similar institutions in England and Scotland. He was of opinion that the proper mode of approaching the subject was not on the merely utilitarian side, but that the scheme was deserving of all encouragement as a means of furthering scientific knowledge by research. There would be the less difficulty in conceding the request of the deputation that no expenditure was asked for, but he feared that it might be objected that the money contributed by the asylums would ultimately have to be supplied from some public source, and he wished to know whether the Irish asylums had any fund at their disposal from which this expenditure might be drawn.

Mr. Norman explained that the public asylums in Ireland had no endowment, but were supported partly by a fixed capitation grant from the Treasury and partly from the rates. The expense, therefore, would fall ultimately on the rates.

The Chief Secretary, resuming, thanked Mr. Norman for his clear statement. He mentioned one or two minor difficulties and said that he could give no actual promise as he did not know when a Bill would be brought in into which the permissive clause desired could be introduced, and that the Government would not think of putting any pressure on the public bodies concerned with the view of compelling them to contribute; but, so far as the permissive clause went, he would be glad if he obtained the approval of his colleagues to insert it into a suitable Bill, and he thought that he might say that this would in all probability be done. He strongly advised, however, that the matter should not be left to the Government merely, but should be urged on the public bodies concerned and brought before the public generally in a way to secure the widest possible support. The £25 or £30 annually which would be required from each county was a very trifling sum.

After a few remarks from Dr. Dawson and Mr. Finegan, Dr. Atthill thanked the Chief Secretary for his reception and the deputation then withdrew.

The Election of a Direct Representative for Ireland on the General Medical Council.

Mr. T. Laffan is contesting the position of Direct Representative for Ireland in the General Medical Council with Sir William Thomson. Mr. Laffan's independence and deep interest in medical education are well known, but if he has no possibility of success his movement will not be for the benefit of the medical profession. The expenditure connected with the Irish Branch Council in the present state of its finances should not be increased, which must be the effect of a contest. There is, too, a decided advantage in avoiding a contest if the result is certain beforehand. It gives additional strength to a candidate unanimously elected. Thus Mr. Laffan incurs great responsibility in his action which only considerable success at the poll will justify.

The Irish Poor-law Medical Service.

A deputation representing the Irish Poor-law Officers' Association waited on the Chief Secretary for Ireland on Jan. 31st and laid before him the necessity of extending to Ireland the English Act which makes it compulsory on local bodies to grant superannuation allowances to all their officials. In reply to Mr. T. W. Russell, M.P., who introduced the deputation, Mr. Wyndham said that if a private Bill was introduced into the House of Commons he would be prepared to support it, although he could not promise that the Government would introduce legislation on the subject. Another deputation representing the Irish Poor-law medical service waited on the Chief Secretary on the following day (Feb. 1st) in reference to the grievance of medical officers as regards superannuation. In reply Mr. Wyndham stated that he was not in favour of drawing a line between the medical and lay officers concerned with the administration in Ireland, but that he would do all that a member of the Government could do to facilitate a private Bill if brought in with something approaching to general consent. A private Bill, he said, which was not contentious, passed through the House of Commons with very little difficulty, as its stages were automatically taken. The accounts of the interviews of these deputations occupied

many columns of the local daily journals, a clear proof that the matter is felt to be one of wide general interest.

A Bacteriological Institute for Ireland.

The annual meeting of the Dublin branch of the British Medical Association was held in Dublin on Jan. 31st, when Sir George F. Duffey was elected President, and delivered an address dealing mainly with the necessity of the establishment of a bacteriological institute for Ireland to be located in Dublin.

Medical Appointment.

Dr. J. B. Story, Professor of Ophthalmic Surgery, Royal College of Surgeons in Ireland, surgeon to the Royal Victoria Eye and Ear Hospital, &c., has been appointed surgeon oculist to His Excellency the Lord Lieutenant of Ireland in the room of the late Dr. A. H. Jacob.

Health of Belfast.

During November 230 cases of zymotic disease were notified—viz., 68 of typhoid fever, 57 of simple continued fever, 40 of erysipelas, 33 of scarlet fever, 20 of diphtheria, nine of membranous croup, and three of puerperal fever. There were 43 deaths from zymotic disease, 95 from phthisis, and 219 from diseases of the respiratory organs. The annual death-rate from all causes was 21·0, that for children under one year old 4·5, and that for those of 60 years and upwards 6·5 per 1000 of the population. In the corresponding period of last year the death-rate from all causes was 26·3, that from zymotic diseases 2·0, and that from chest affections 12·8 per 1000 of the inhabitants. The present death-rate is therefore very low, though slightly greater than that of last month. This is entirely due to causes other than zymotic diseases or chest affections, both of which show a slightly lower rate than in the preceding month. The low rate from the latter cause is due mainly to the unusually high temperature which prevailed during the period, and contrasts very favourably with that of the corresponding month of last year, when it was 12·8.

The Samaritan Hospital, Belfast.

At the annual meeting of the supporters of this hospital held on Feb. 4th it was reported that during the past year 652 patients had been treated in the extern department and 197 in the wards, of whom 157 required surgical treatment. 45 major operations had been performed, and the great majority of the patients had made good recoveries. The hospital was now entirely free of debt, but an additional £100 per annum was still needed from subscribers to make the hospital self-supporting.

Rainfall in Belfast during January.

During the month of January, 1901, the rainfall was 3·05 inches, which fell on 23 days, this amount being well under the average and almost one inch less than the corresponding period of last year.

The Death of the Queen.

Universal sorrow has been felt in Belfast at the passing of the great and good Queen Victoria. On Feb. 2nd all the shops were closed, the city was in a state of mourning, and memorial services were held. In no place in the empire is the feeling of the people more loyal than in Belfast.

Feb. 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

An Office Spittoon.

AT the meeting of the Academy of Medicine held on Jan. 15th M. Brouardel read for M. Ch. Périer a note relating to the use of individual spittoons for clerks and office employés as a means of prophylaxis against tuberculosis. M. Périer reminded the meeting that the Academy, on June 26th, 1898, unanimously agreed to the conclusions formulated in a report of Professor Grancher, which was read in the name of the Commission on Tuberculosis. The prophylactic measures recommended as being extremely simple to carry out were as follows:—1. Sputa should be collected in a pocket spittoon holding a little carbolic acid solution of 5 per cent. strength and coloured, or at least a little water. 2. Dust should be avoided as far as possible by the substitution of wiping over furniture, floors, and the like with a damp cloth instead of sweeping or brushing them. 3. All milk, whatever its source, should be boiled before drinking it. These measures are certainly perfectly simple and easy to apply in public life, but in large establishments the problem becomes more and more complex as the number of employés increases and tends to become almost insoluble. Railway companies are a flagrant example of this. The practical difficulties may be resolved into a question of money. Other difficulties may be overcome by persuasion. With regard to passengers all that can be done is to request them not to spit elsewhere than in spittoons, and it would seem easy to demand the same practice from clerks and the like congregated in greater or less numbers in an office where they spend many hours a day. The matter, however, is not so easy. A spittoon used in common is disgusting and a likely source of danger, so that one intended for office clerks must be some form of individual apparatus. Pocket spittoons will not do, for the difficulty of having them administratively cleansed would make them agents of spreading disease rather than a means of defence against it. The apparatus chosen must therefore be one of the class known as "indoor" (*d'appartement*). Professional etiquette does not allow the tuberculous clerks to be ear-marked by having spittoons distributed to them alone, therefore every clerk must have one. The tuberculous clerk does not like everyone to see what he spits up, neither does he want his senses offended by the sight of his colleagues' spittoons. This feeling must be respected; if it is ignored spittoons will be found used as flower vases or hidden away in drawers or cupboards. Thus the desired end is the least attained in the very place where it is most to be desired, and this, too, is due to the resistance to prophylactic measures of the very person whose interest in the success of such measures is the greatest. This resistance, therefore, must be overcome by altering the circumstances which give rise to it. Three conditions must be fulfilled: (1) the spittoon must not be clumsy; (2) it should be concealed in some way; and (3) it must be able to be carried in the hand. The Northern Railway Company is just about to adopt a form of spittoon which seems to fulfil all the above-mentioned conditions. It is made of blue glass and has a handle and it is kept in a box open at one side. On the top of this box, which occupies the usual position of the ink, is placed the inkstand. The clerk, therefore, has only to raise his hand a little higher than usual to dip his pen and this is the sole inconvenience which this little piece of furniture will cause him.

The Influence of Climate upon Experimentally Produced Tuberculosis.

At the Congress upon Tuberculosis held last year at Naples M. Lannelongue, M. Achard, and M. Gaillard communicated the results of their experiments upon the above subjects—results which were astonishing. Their report was read before the Academy of Sciences at the meeting held on Jan. 21st. Two sets of experiments were made. 300 male guinea-pigs were divided into six lots of equal weight and were inoculated simultaneously with an equal dose of human tuberculosis culture. They were then kept in different climates and at different altitudes, such as at sea-level, at a height of 1000 metres above sea-level, in the midst of woods, and in a plain. The two remaining lots of 50 each were kept in a laboratory at Paris where they got no sunshine, or, indeed, much light of any kind. The laboratory was badly ventilated and damp, full of ammoniacal emanations, and an atmosphere containing 1700 microbes to the cubic metre. The temperature was fairly equable, however, and the animals had to keep still because there was no room for them to run about. One experiment lasted for one year, six months, and five days, while the other lasted for one year, two months, and 20 days. Of the laboratory guinea-pigs six remained alive of the first lot and 11 of the second. Of those kept at the sea-level there remained three, of those on the hills four, and of those in the plain one. One important result of these experiments is the fact that tuberculosis behaves very differently in animals of the same class. As in these experiments the doses were equal and the animals of the same class were kept under identical conditions it would seem that the differences in the evolution of the disease were due to the different resistance power of the individual animals. Some died from diffuse tuberculosis at the end of six months and some out of the same lot at the end of 15 or 18 months with only a few very localised thoracic lesions. In three animals the infection either aborted or underwent spontaneous cure.

Radio-pelvigraphy and Radio-pelvimetry at Long Range.

At the meeting of the Academy of Sciences held on

Jan. 21st M. Varnier said that it was possible to obtain, simply by means of a radiograph, a better representation of the bony pelvis than by ordinary pelvimetry. The dimensions were accurate and diameters were obtained of sufficient exactitude to be useful to the obstetrician—namely, those of the false pelvis and of the entrance and exit of the true pelvis. The radiograph was taken in the prone position—i.e., with the subject or patient lying in the ventral position. The bulb is placed at a distance of 2·50 metres from the sensitive plate so that the kathode is perpendicular to an axis passing through the plane of the brim of the pelvis. Under these conditions the exaggerations in the diameters amount only to some five millimetres. The method is applicable in the case of the living woman as well as in the cases of a corpse or of a dry bony pelvis. M. Varnier made some experiments upon both dried specimens and upon dead bodies which showed that if the tube were placed still further off—namely, at a distance of five metres—even the small error of five millimetres was avoided. With an exposure of 10 minutes and a current of 10 ampères at 26 volts M. Varnier obtained a good radiograph of a dried pelvis at a distance of 25 metres. With 20 minutes' exposure a radiograph was obtained at a distance of 30 metres. Two metal bars gave good results at distances of between 35 and 40 metres and a leaden spiral was successfully radiographed at a distance of 45 metres. The dead body could be radiographed at a distance of five metres and the living hand at the same distance in nine minutes. These results give good ground for thinking that before long it will be possible to radiograph with accuracy the pelvis of a living woman at a distance of five metres and thus to avoid the slight exaggeration obtained at a distance of 2 50 metres. Apparently radiography even in its present stage can give superior results in this connexion to those obtained by digital, manual, or instrumental pelvimetry.

Feb. 6th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

On the Relation of the Mucous Membrane of the Nose to the Female Sexual Organs.

SOME years ago Dr. Fliess of Berlin published a monograph on the Relation of the Mucous Membrane of the Nose to the Sexual Organs in Females,[1] and in this work he made the announcement that in the nasal mucous membrane there are two spots which are capable of influencing sensation in the female genital organs. By touching the anterior end of the inferior turbinated bone with a probe a feeling of pain in the hypogastric region is produced in women suffering from dysmenorrhœa, while touching the tuberculum septi produces a pain in the sacral region. The pain produced is always on the side of the body corresponding to the nasal spot that is touched. Dr. Fliess made the further observation that the pain of dysmenorrhœa was immediately relieved when a strong (20 per cent.) solution of cocaine was applied to those two nasal spots, and that dysmenorrhœa could be cured completely by caustic treatment of the anterior part of the inferior turbinated bone and the tuberculum septi. He also asserted that at the time of menstruation a swelling of the mucous membrane of the nose at the two above-mentioned spots could be observed. These statements of Dr. Fliess were much doubted by the medical profession and his mode of treating dysmenorrhœa found no acceptance. Three years ago, however, Dr. A. Schiff of Vienna commenced a re-investigation of the subject at the gynæcological clinic of Professor Chrobak in Vienna. His first series of cases consisted of 26 women suffering from dysmenorrhœa, and the second consisted of 21. Of these 47 cases of dysmenorrhœa with intense continuous pains lasting for some days 37 were treated successfully by the application of cocaine to the turbinated bone and to the tuberculum septi, so that the treatment was successful in 72·4 per cent. of Dr. Schiff's patients. The effect of the application of a 20 per cent. solution of cocaine to the nasal spots lasted each time for nearly 24 hours. The experiments were made in such a way that any influence of suggestion was perfectly excluded. Cocainisation of other parts of the interior of the nose or of the pharynx did not produce any effect on dysmenorrhœal pain. Experiments made by Dr. Schiff also corroborated the statements of Dr. Fliess with regard to the connexion (1) between the tuberculum septi and painful sensations in the sacrum and (2) between the inferior turbinated bone and painful sensations in the abdomen. Dr. Schiff also confirms the observations of Dr. Fliess that dysmenorrhœa caused by mechanical obstruction (stenosis of the uterine orifice, narrow cervical channel, anteflexion of the uterus, &c.) was not influenced by cocainisation of the nasal mucous membrane. Hysterical dysmenorrhœa also did not yield to the cocaine treatment, while even dysmenorrhœa combined with structural disease of the uterus and of the adnexa was curable by the nasal treatment as well as nervous dysmenorrhœa. In 17 cases Dr. Schiff tried the treatment of the "nasal genital spots" (as they are called by Dr. Fliess) with caustics and with electrolysis, which proved perfectly successful in 12 of these patients. Dr. Schiff therefore recommended the nasal treatment of dysmenorrhœa as suggested by Dr. Fliess, and some of the Vienna rhinologists and gynæcologists have reported their experiences at recent meetings of the Vienna Society of Physicians and have spoken in favour of this treatment of dysmenorrhœa. But in the discussion on this subject, which occupied three evenings, no one suggested any satisfactory theory as to this interesting relation between the nose and the female sexual organs. One of the speakers made an allusion to the work of Dr. Head, while another called attention to the old theory of sympathetic action which prevailed in the middle of the nineteenth century (Henle).

Feb. 1st.

[1] THE LANCET, June 28th, 1897, p. 1775.

Medical News.

VACCINATION GRANT.—Dr. W. Napper Nevill, the public vaccinator for Bedminster, has been awarded a grant for successful vaccination from the Local Government Board.

PRESENTATION TO A CENTENARIAN.—Mrs. R. Brembridge of Sidmouth, Devon, celebrated her hundredth birthday on Jan. 21st and was presented with an illuminated address by the tradespeople of the town.

PROFESSOR VIRCHOW'S MUSEUM.—The Vienna *Neue Freie Presse* of Jan. 17th states that a disastrous fire has occurred at the Pathological Institute in Berlin and that the most valuable portion of Professor Virchow's private museum has been destroyed. The loss of the anthropological collection made in the Philippine Islands by Professor Jagor is especially regretted.

AMBULANCE FIRST AID AT COLCHESTER.—At the weekly parade of the Colchester Borough police, held on Feb. 1st, the Mayor of the town presiding, the certificates obtained by the members of the force in connexion with the St. John Ambulance Association, were distributed, after which, on behalf of the class, the Mayor presented Mr. J. E. A. G. Becker, M.B. Edin., L.R.C.P. Lond., M.R.C.S. Eng., for his instructive ambulance lectures, with a gold mounted umbrella, inscribed "Dr. Jonathan Becker, from the Colchester Police Ambulance Class, December, 1900."

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ADAMS, E. G. B., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed District Medical Officer, Langport Union, vice J. D. Adams, resigned.

ALLEN, F. J., M.D. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Westminster Borough Council.

ARKLE, G. M., L.S.A., has been appointed Medical Officer to the Belmont-road Workhouse, West Derby Union, vice J. J. Flinn, resigned.

BAILEY, R. T., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer to the Infirmary, West Derby Union, vice W. R. H. Williams, resigned.

CLAPHAM, CROCHLEY, M.D., F.R.C.P.E., has been appointed Consulting Physician to the Royal Hospital, Sheffield.

DUDFIELD, R., M.B. Camb., L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed, *pro tem.*, Medical Officer of Health for the City of London, vice S. Saunders, deceased.

EATON, OLIVER, L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed Certifying Surgeon under the Factory Acts for the Exmouth District of Devonshire.

EDMOND, W. R., M.B., C.M. Edin., L.R.C.P. Edin., M.R.C.S., has been appointed District and Workhouse Medical Officer, Totnes Union, vice L. J. Hains, resigned.

FRASER, JAMES, M.B., C.M. Aberd., has been appointed Deputy Medical Superintendent at the Cleveland-street Asylum, Central London Sick Asylum District.

GREGORY, E. T., M.R.C.S., has been appointed District Medical Officer, Paddington.

HEDIN, S. G., M.D. University, Lund, Sweden, has been appointed Chief of the Department of Pathological Chemistry, Jenner Institute of Preventive Medicine, London.

HELM, W. A., M.B., Ch.B. Vict., has been appointed Assistant Medical Officer of the Infirmary, Parish of Birmingham, vice E. C. Gorman, resigned.

HOGG, KATIE WELTON, B.A. Sydney, M.B., Ch.B. Edin., L.M. Coombe Hospital, Dublin, has been appointed Assistant to the Master, Coombe Hospital, Dublin.

HUNT, J. W., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed First Assistant Medical Officer at the Hendon Asylum, Central London Sick Asylum District.

JENKINS, J. D., M.D. Lond., B.S., L.R.C.P., M.R.C.S., has been appointed Medical Officer of Health, Rhondda Urban District.

LEATHES, J. B., M.B., B.Ch. Oxon., F.R.C.S. Eng., has been appointed Assistant in the Department of Pathological Chemistry, Jenner Institute of Preventive Medicine, London.

LEGG, T. PERCY, M.B., F.R.C.S., has been appointed Assistant Surgeon with charge of Out-Patients to the Royal Free Hospital, Gray's Inn-road, London, W.C.

LITTLEJOHN, H. SYDNEY, B.A., M.D., C.M., has been appointed Visiting Medical Officer to the Thomas Walker Convalescent Hospital, Concord, Sydney, New South Wales.

MARSHALL, T. B., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Maldon Union, vice F. Pershouse, resigned.

NORMAN, R. H., M.D. Lond., B.S., M.R.C.S., L.R.C.P., has been appointed Honorary Physician to the Holloway and North Islington Dispensary.

PRICE, E. O., M.D. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Bangor District of Carnarvonshire.

TROUGHTON, A. J., L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Medical Officer for the Bentham District of the Settle Union.

WEBSTER, A. J., M.B., C.M. Edin., has been appointed District Medical Officer for the parish of Willesden.

YOUNG, W. J., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant in the Chemical Department, Jenner Institute of Preventive Medicine, London.

WHYTOCK, A. S., M.A., M.B., Ch.B. Edin., has been appointed Resident House Surgeon to the Brighton and Hove Hospital for Women, vice H. E. L. Joy, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer. Salary £125 per annum, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House Surgeon. Salary £65 per annum. Also Junior House Surgeon. Salary £60 per annum, with board, lodgings, and attendance.

BOROUGH HOSPITAL, BIRKENHEAD.—Senior and also Junior Resident House Surgeon. Salary £100 and £80 respectively per annum, with board and washing.

CITY ASYLUM, Birmingham.—Resident Clinical Assistant, single and under 30 years of age. An honorarium attaches to the post of £50 a year, board, lodging, and washing provided.

COUNTY ASYLUM, Whittingham, Lancashire.—Senior Assistant Medical Officer. Salary £225 per annum, rising to £250 at the end of 12 months, with board, lodging, washing, and attendance.

DISTRICT INFIRMARY, Ashton-under-Lyne.—House Surgeon. Salary £100 a year and board and lodging.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon, unmarried. Board and residence provided.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer and Registrar. Salary £50, with board and washing.

GLASGOW SAMARITAN HOSPITAL FOR WOMEN.—House Surgeon (female).

GLOUCESTER COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £150 per annum, rising to £180, with board, lodging, and washing.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing £10 a year to £120, with board, residence, attendance, and washing.

GUILDFORD, GODALMING, AND WOKING JOINT HOSPITAL BOARD.—Medical Officer for the Isolation Hospital at Woodbridge, Guildford. Salary £175 per annum.

GUILDFORD RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £250 per annum, which will include travelling and all other expenses.

GUY'S HOSPITAL MEDICAL SCHOOL.—Gordon Lectureship in Experimental Pathology.

HEIGHAM HALL ASYLUM, Norwich.—Assistant Medical Officer.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £40, with board and lodging.

ISLANDS OF SANDAY AND NORTH RONALDSHAY.—Resident Medical Officer. Salary £80 per annum, with dwelling-house, offices, garden, and ten acres of ground, subject to annual rent of £22.

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Fourth Assistant Medical Officer and Pathologist. Salary £175 per annum (rising £5 a year), with furnished quarters, attendance, coal, gas, garden produce, and washing.

LINCOLN COUNTY HOSPITAL.—Assistant House Surgeon for six months, eligible for additional six months. Honorarium of £25 for each period of six months, with board, residence, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100, with board and apartments.

LONDON COUNTY ASYLUM, Cane-hill, Purley, Surrey.—Junior Assistant Medical Officer, between twenty-three and thirty years of age. Salary £150 per annum, with board, furnished apartments, and washing.

LONDON TEMPERANCE HOSPITAL.—Assistant Surgeon. Honorarium of 50 guineas a year.

METROPOLITAN ASYLUMS BOARD.—Not fewer than Three Assistant Medical Officers (unmarried, and not exceeding 35 years of age), at the Fever and Small-pox Hospitals. Salary £160 per annum during the first year, and (subject to the direction of the Hospital Committee, £180 the second year, and £200 the third and subsequent years, with board, lodging, attendance, and washing (subject to statutory deductions under the Poor-law Officers' Superannuation Act, 1896).

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £60 per annum, with board, attendance, and washing.

NORTH RIDING ASYLUM, Clifton, York.—Assistant Medical Officer, not more than 30 years of age. Salary commencing at £125, rising to £175, and £10 in lieu of liquor, with board, lodging, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £100, with board, lodging, and washing. Also Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

OWENS COLLEGE, Manchester.—Senior Demonstrator in Anatomy.

ROYAL EAR HOSPITAL, Soho.—House Surgeon, non-resident. Small honorarium.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

ST. OLAVE'S UNION.—Assistant to the Medical Officer and Dispenser at the Workhouse, Ladywell, S.E. Salary £50 per annum, with rations, furnished apartments, washing, attendance, and £4 per annum in lieu of beer.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £24 per annum, with board, washing, and residence.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Sherston, in the County of Wilts; at Linton, in the County of Cambridge; at Wainfleet, in the County of Lincoln; and at Wooler, in the County of Northumberland.

WARNEFORD ASYLUM, Oxford.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior Resident House Surgeon, unmarried. Salary £120 per annum, with furnished residence and board.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodgings, washing, and attendance.

WOKING URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £80 per annum.

YORK COUNTY HOSPITAL.—Resident Assistant House Surgeon. Salary £60 per annum, with board, attendance and washing.

Births, Marriages, and Deaths.

BIRTHS.

BALLINGALL.—On Feb. 2nd, at Grand-parade, St. Leonards-on-Sea, the wife of George A. Ballingall, M.D., of a daughter.

BURTON-FANNING.—On Feb. 4th, at Norwich, the wife of F. W. Burton-Fanning, M.D., of a son.

CROPPER.—On Feb. 5th, at Mount Ballan, Chepstow, the wife of John Cropper, M.B., B.C. Camb., of a daughter.

JOHNSON.—On Feb. 2nd, at Osborne-terrace, Church-street, Egremont, Cheshire, the wife of Alfred Johnson, M.R.C.S., L.R.C.P., of a son.

PATERSON.—On Feb 2nd, at Windsor-place, Cardiff, the wife of Donald Rose Paterson, M.D. Edin., of a daughter.

MARRIAGES.

ARCHER—PHILPOTT.—On the 5th Feb., at Christchurch, Adelaide, South Australia, Edmond Lewis Archer, M.B. Durh., to Helen Philpott of Prince's-square, Bayswater, London. (By cable.)

HAYWARD—ROLLESTON.—On Feb. 4th, at Christ Church, Lancaster-gate, W., John Arthur Hayward, M.D., elder son of the late John Hayward, of Rushall, Wilts, to Rosamund Grace, younger daughter of the late Professor Rolleston, F.R.S., of Oxford.

DEATHS.

BARBER.—On Jan. 24th, at his residence, the Croft, Eastwood, suddenly, Robert David Barber, M.R.C.S. and L.S.A., aged 36 years, youngest son of the late Samuel John Barber, architect, of Eastwood, Notts.

OGILVIE.—On Feb. 2nd, at Welbeck-street, Cavendish-square, Leslie Ogilvie, M.D., M.R.C.P., aged 47 years.

PRICHARD.—On Feb. 2nd, at Redland-road, Bristol, James Edward Prichard, B.A., M.B. Oxon., Surgeon to H.M. Prison, Horfield, Bristol, aged 51 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PERSONATION AT EXAMINATIONS.

A CASE is at present before the courts in which a medical coach is charged with personating a pupil. Without in any way commenting upon this particular case we may remark that the special system presumably adopted is far superior to that ordinarily used. Supposing that a man is in for an examination and feels doubtful of passing (we will call him A), nothing would seem easier than for A to say to B: "You go into the examination room and do the papers under my name as representing myself." But if any suspicion should arise A is nonplussed. He can only know what went on in the room from hearsay, and he has no means of proving that he was in the room. But supposing A and B to enter jointly for the examination, only entering under each other's names, A will be in a much better position, for if any questions are asked he will have actually been through the examination, although he will probably have failed. A and B may both get through, in which case B simply does nothing more and A takes the position he has rightly won. But if A masquerading as B fails he has only to assume the position which he has fraudulently acquired through the agency of B. The plan is so simple that we almost wonder how many times it has been carried out. The only way in the above hypothetical case in which A could be found guilty would be for the examiners to ask him to write a passage, in which case, as in all probability he could not imitate B's handwriting with exactness, the fraud would come to light. But for the examiners to do this presupposes that they had knowledge of what A was going to do before he did it. The size of modern examination classes renders anything like a personal identification of the candidates very difficult, but something of the kind will have to be done if frauds such as those to which we have alluded are to be made impossible.

SPECIALISM *AD ABSURDUM*.

THE December, 1900, number of the *St. George's Hospital Gazette* contains some amusing verses signed "J. B.," an author who was, if we remember right, responsible for some of the words published in the St. George's Hospital songs, a work reviewed in our columns some two years or so ago. (THE LANCET, Dec. 17th, 1898, p. 1642.) "J. B.'s" lyric is entitled, "Wanted, a Specialist," and sets forth the untimely fate of a titled valetudinarian who was always ill, or thought he was. Eventually he suffered from—but we will let "J. B." tell the story in his own words.

A tumour he developed on
A spot that's quite neglected;
No specialist for just that point
He anywhere detected.

So curiously was it placed,
That, search from toe to crown,
You saw it not when he stood up,
Still less when he sat down.
From day to day the swelling grew,
So vast became that tumour,
You could not say which was the growth
And which Sir Francis Boomer.

And so at last it finished him,
Despite his numerous staff,
And he explained the cause of death
In this his epitaph:

"My ailment could not treated be,
The times were out of joint;
There was no specialist upon
The Perineal point.
Some doctors find their work before,
And others theirs behind.
But none devotes attention to
The spot which I've defined."

We are evidently sadly behind the times. In ancient Egypt, says Herodotus, "every disease hath his several physician," and possibly the end of the new century may see "perinealists."

THE CASE OF MR. JOSEPH HENDERSON MARTIN.

To the Editors of THE LANCET.

SIRS,—I am desired by Mrs. Joseph Henderson Martin to thank on her behalf those who have so generously helped her and her family in the dire straits to which they have been reduced by the sudden breakdown of her husband. The appeal I made to you and which you published in THE LANCET of Nov. 10th last, p. 1305, had produced the sum of £23 and I had begun to think no further subscriptions would be received until this morning's post brought me a very sympathetic note from an old "fellow-student" at present serving in South Africa. He does not wish his name published, but encloses a cheque for £5. The latest report of Mr. Martin is that he is much worse and his death is expected very shortly. If any of your readers could assist, or bring any influence to bear upon those who have the power, to get either of the boys into Epsom or Christ's Hospital it would be most gratefully accepted. Should there be any of those who knew Mr. Martin who failed to notice the previous appeals but who have it in their power to send some pecuniary assistance I would have much pleasure in passing it on to Mrs. Martin. She has been endeavouring to earn some money by taking a house and trying to let it off in furnished apartments. So far she has been unsuccessful, but a little more help now may tide her over the difficult period of waiting until she has formed a connexion.

I am, Sirs, yours faithfully,
The Hawthorns, Chester-le-Street, Feb. 4th, 1901. H. LYON SMITH.

VACCINATION GRANTS.

DR. H. HODGSON of Bilsworth writes to us to protest against the "advertising by medical men of their having received such an easily acquired thing as a vaccination grant." Dr. Hodgson must surely have forgotten that one of the most effective weapons in the hands of the anti-vaccinationists was the fact that sometimes this trivial operation had been followed by disastrous results owing to a want of due care and circumspection in its performance. The grants are given in recognition of vaccinations properly and carefully performed, and for this reason we have always been glad to record the fact of such grants being awarded, and we shall continue to do so with pleasure.

MEMORIAL TO THE LATE DR. ARCHIBALD HAMILTON JACOB.

THE following contributions to the memorial fund have been received or promised. Cheques and postal orders should be made payable to the honorary treasurers (Sir Charles A. Cameron, C.B., 51, Pembroke-road, Dublin, and Mr. L. H. Ormsby, 92, Merrion-square, Dublin), and crossed "Ulster Bank." The honorary secretary is Mr. George F. Blake, J.P., Registrar of the Royal College of Surgeons in Ireland:—

	£	s.	d.
Sir Thornley Stoker ...	10	10	0
Dr. Lombe Atthill... ...	10	10	0
Sir Christopher Nixon, President R.C.P.I. ...	5	5	0
Mr. Thomas Myles, President R.C.S.I.	5	5	0
Mr. L. Hepenstal Ormsby, Vice-President R.C.S.I. ...	5	5	0
Sir Charles A. Cameron	5	5	0
Mr. A. A. Tindall (London)	5	5	0
Mr. Albert O. Speedy...	5	5	0
Dr. Stewart Woodhouse	5	5	0
Mr. George F. Blake, J.P., Registrar R.C.S.I.	5	5	0
Sir John Banks, K.C.B.	5	5	0
Dr. D. B. Jacob	5	5	0
Dr. R. D. Purefoy ...	5	5	0
Dr. James Little	5	5	0
Sir Philip C. Smyly ...	5	0	0
Dr. Joseph Smyth (Naas)	3	3	0
Dr. Thos. H. Moorhead (Cootehill) ...	2	2	0
Mr. J. P. Garland ...	2	2	0
Sir George Duffey ...	2	2	0
Mr. H. G. Sherlock ...	2	2	0
Sir Francis E. Cruise...	2	2	0
Sir John Wm. Moore...	2	2	0
Sir Wm. Thomson ...	2	2	0
Sir Wm. Porter, Bart.	2	2	0
Dr. W. J. Martin ...	2	2	0
Mr. R. R. Leeper ...	2	2	0
Dr. E. P. Wright ...	2	2	0
Mr. R. L. Swan... ...	2	2	0
Dr. H. McN. Jones ...	2	2	0
Dr. Wallace Beatty ...	2	2	0
Mr. John Barton... ...	1	1	0
Dr. Richard J. Kinkead (Galway)	1	1	0
Mr. J. Goodwin Shea	1	1	0
Dr. R. T. Hearn	1	1	0
Dr. P. J. Macnamara	1	1	0
Rev. S. Chaplin	1	1	0
Mr. A. Meldon	1	1	0
Mr. H. Benson Goulding	1	1	0
Mr. J. Pim	1	1	0
Dr. R. Lane Joynt ...	1	1	0
Mr. G. M. P. Murray...	1	1	0
Dr. R. L. Heard	1	1	0
Dr. J. F. Pollock	1	1	0
Dr. A. Patton	1	1	0

ACROMEGALY IN THE NEGRO.

IN the *Maryland Medical Journal* for December, 1900, Dr. J. Hall Pleasants of Baltimore describes a case of acromegaly in a negro associated with a low grade of giantism. The individual was apparently a full-blooded negro, probably between 25 and 35 years old, and of a grade of intelligence corresponding to that of an imbecile of the higher type. He weighed 198 lb. and his height was six feet two inches, but his true height must have been at least an inch more than this when allowance was made for his stoop. The thyroid was apparently atrophied, no suggestion of the gland being made out on palpation. The enlargement of the hands was symmetrical in all directions. The left foot, which was slightly the longer of the two, measured 12¼ inches in length by 12¼ inches in circumference around the ball of the foot. Radiographs of both hands and feet showed that the enlargement of the bones was most marked in the epiphyses, especially of the terminal phalanges, where there was marked "tufting." Dr. Pleasants has found three cases of acromegaly in the negro already recorded in medical literature.

"CLAIRVOYANCE" AND THE DEATH OF MR. FOXWELL.

ON Feb. 5th Mr. Braxton Hicks held an inquest upon the body of Mr. Percy Lintott Foxwell, which was found in the Thames at Thames Ditton on Jan. 31st. It will be remembered that the deceased left his home on Dec. 20th, 1900, and on the evening of that day a telegram was received by his wife saying that he would not be home to dinner. As next morning he had not returned she informed the police. The widow in her evidence said that on Jan. 5th, as no trace of the missing man had been obtained, she consulted a *clairvoyante*, who by means of crystallomancy told her that her husband had been drowned. She herself looked in the crystal and declared that she saw her husband's form and the

place where it was to be found. "I thought," she is reported as saying, "that it was near some waterworks. ..... I saw waterworks quite plainly and a sort of water tower. The *clairvoyante* said I should have news of my husband in 10 days, but this was wrong." Witness continued that as she got no news she consulted another *clairvoyant*—a man this time who came to her house. He said that her husband had met with foul play and offered to show her where the body lay. They went together to the Mole, which later was dragged. The *clairvoyant* also said that he had seen her husband walking with a woman and a man, that the man felled her husband, and that the two threw the body into the Mole. An open verdict was returned. There will be persons who think that this case proves the value of clairvoyance, but it is obvious that the mystic procedure served only to confuse investigation. Given a man who lives by the river, it is the most probable thing to suggest that after a lengthened disappearance his body should be found there. As for Mrs. Foxwell's evidence we should have been very surprised had she seen anything other than what she did. Her mind was naturally full of her husband and she saw, or thought she saw, his image. The *clairvoyants* had previously mentioned drowning and the daily press had alluded to the same possibility, while the Foxwells lived in a district surrounded by waterworks, so that these edifices naturally came before the mental eye. As for the suggestion of the male seer that some intrigue took place of which Mr. Foxwell was the victim this is a gratuitously cruel assumption.

A FINE FOR DYING.

To the Editors of THE LANCET.

SIRS,—I think the fact mentioned in the inclosed letter which I have received from the relative of a gentleman whom I advised to go to Caux cannot be too widely known. That when English people die abroad their friends should be "fined" in this manner is a great wrong. I have heard of similar cases at Territet and Pau. Some steps ought to be taken to protect our patients from such extortionate practices. I am, Sirs, yours faithfully,

Jan. 22nd, 1901. M.R.C.S., &c.

[INCLOSURE.]

DEAR DR. A.,—Having just returned from Switzerland, where my brother-in-law, Mr. Z., has been staying for the last two months, I think it well to draw your attention to the way I was treated by the officials at the —— Hotel, Caux, S. Montreux. As you are aware, Mr. Z. died at this hotel on the 12th inst., and on my leaving there on the 15th a charge of £40 compensation was made by the hotel. I strongly protested against this, but in the end had to pay, and was informed by the hotel officials that this was a fixed charge made in all cases where a death takes place at this hotel. Yours faithfully,

X. Y. Z.

"AND A BABBLED O' GREEN FIELDS."

THE Rev. D. R. Fotheringham has an interesting article in the February issue of *Knowledge* on Emendation of the Folio Text of Shakespeare, in which he gives the various renderings—good, bad, and otherwise—of the above oft-quoted phrase. He suggests a reading of the passage as follows: "I knew there was but one way (for his nose was as sharp as a pen) and a table of green fields." Emendations of Shakespeare's text have had from time to time to give way to the folio text. In spite of the Rev. D. R. Fotheringham's suggestion that Mrs. Quickly meant that Sir John Falstaff had only one road to go and that the road to the churchyard, ending amid the little mounds scattered over God's green acre, we prefer the more generally accepted rendering.

A QUESTION OF ETIQUETTE.

To the Editors of THE LANCET.

SIRS,—Please can you give me advice in the following case? Dr. A has been the medical attendant to patient C and family. Recently one member of the family has been ill but has called in Dr. B. Neither the patient nor Dr. B has informed Dr. A of this. What ought Dr. A to do in case he is called in to see any member of the family, and also as regards Dr. B? I am, Sirs, yours faithfully,

Feb. 4th, 1901. BEDS.

*** Dr. A can please himself entirely about continuing to attend the C family. A patient has the right to change his medical attendant when and how he likes. His way of doing so may be polite or impolite, but no question save that of courtesy between fellow-citizens can arise. Dr. B transgressed a familiar rule of medical etiquette if the particular member of C's family had previously been A's patient. And if Dr. A refuses further professional relations with him he will be justified, always assuming that Dr. B acted as "Beds" states. Whether he will be wise is for himself to judge, while all signs of ill-feeling between members of the medical profession are regrettable. At any rate, Dr. A will take care that he is completely informed as to the whole episode before he openly resents Dr. B's conduct.—ED. L.

G. P. asks if anyone could kindly inform him where he could hire slides (limelight) and letterpress for a lecture on the Passion Play at Oberammergau? He might apply to Messrs. Newton, Fleet-street, but possibly one of our readers can tell him exactly what he wants to know.

Mizpah.—1. The ingredients differ according to the purpose for which the solution is required. The Local Government Board disinfecting solution for cholera is as follows: Corrosive sublimate, ½ oz.; hydrochloric acid, 1 oz.; soluble aniline blue, 5 grains; water three gallons. This gives a solution of 1 in 1000. 2. For surgical purposes creolin is preferable. The other fluid mentioned should only be used for crude disinfecting purposes.

Qua Hat.—1. There can be no doubt that C's conduct is "covering." The matter should be laid before the General Medical Council. 2. Our correspondent might put the facts before the Local Government Board, but we think it unlikely that he will get a grant for work performed by his predecessor.

Amateur must hold his hand, and we think by his choice of pseudonym that he will be ready to do so. Applied mechanics are often of use in surgery, but it takes more than skill in carpentry to make an operating surgeon.

The Removal of Hæmorrhoids by Excision.—A communication upon this subject, bearing no address, date, or signature, and posted at Manchester, has reached us. We shall be glad to hear from the author.

H. K.—We recommend Gould's Medical Dictionary, published by Messrs. Baillière, Tindall, and Cox, 20 and 21, King William-street, Strand, W.C.

North Warwicks should consult his medical man upon the points which he refers to us. The apparent discrepancy will then probably disappear.

"*Formula No. 4. Directions for Use.*"—We have received a bottle so labeled, but no letter explaining why it was sent to us has reached us.

F.R.C.S.—THE LANCET, Sept. 4th, 1897, p. 609.

Student.—Yes.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 7th, 1901.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Feb. 1	29·74	W.	...	51	41	33	33	35	Overcast
,, 2	29·68	S.W.	...	53	43	35	37	38	Cloudy
,, 3	29·60	E.	...	53	39	36	36	36	Cloudy
,, 4	29·51	N.E.	...	47	38	30	31	31	Foggy
,, 5	29·31	N.	0·27	44	37	31	33	34	Overcast
,, 6	29·64	N.E.	0·17	53	40	33	35	36	Overcast
,, 7	30·20	N.	...	53	39	33	33	35	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (16th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily

SOCIETIES.

MONDAY (11th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Dr. C. E. Beevor: Two Cases of Paralysis of the Serratus Magnus and Lower Half of the Trapezius.—Mr. F. C. Wallis: Two Cases of Partial Paralysis of the Fore-arm and Hand (1) from Bismarch's Bandage, (2) from a Splint.—Mr. M. Sheild: (1) Case of Gastro-jejunostomy; (2) Case of Œsophagotomy for "Foreign Body" in a Child aged six years. (3) Case of Enormous Chronic Abscess treated by a Novel Method.—Dr. W. Hunter: Case of Pernicious Anæmia after Serum Treatment.—Mr. S. Boyd: Case of Gastro-jejunostomy.—Dr. St.Clair Thomson: Two Cases to illustrate the desirability of Removing the Tonsils by Enucleation in Certain Instances.—Dr. J. L. Bunch: Case of Abdominal Swelling in a Child aged three years.

SOCIETY OF ARTS.—8 P.M. Mr. W. J. Pope: The Bearings of Geometry on the Chemistry of Fermentation. (Cantor Lecture.)

TUESDAY (12th).—PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M. Prof. H. G. Greenish: The Percentage Ash of Various Crude Drugs and their Powders. (Communication from the Society's Pharmaceutical Research Laboratory.)

ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Adjourned Discussion on Cases of Arsenical Beer Poisoning. Dr. Reynolds (Manchester) will show Illustrations and Dr. Dreschfeld, Dr. J. Bury, Dr. Delépine, Dr. D. Mann, Dr. N. Raw, Dr. Kelynack, and Sir Lauder Brunton will speak.

WEDNESDAY (13th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8 P.M. Annual Meeting. 8.30 P.M. Mr. J. Poland: Hunterian Oration.

SOCIETY OF ARTS.—8 P.M. Mr. W. Thomson: Arsenic in Beer and Food.

THURSDAY (14th).—NEUROLOGICAL SOCIETY OF LONDON (11, Chandos-street, W.).—8.30 P.M. Annual General Meeting. Election of Officers. Dr. W. J. Mickle: Automatic Wandering. (Presidential Address.)

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Mr. F. Edge, Mr. C. Martin, and Dr. H. Macnaughton-Jones. Paper:—Mr. B. Jessett: The Surgical Treatment of Prolapsus Uteri. (President's Introductory Address.)

FRIDAY (15th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Dr. A. Newsholme (Brighton): The Epidemiological Aspects of Isolation Hospitals.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (Paddington-green Children's Hospital).—5.30 P.M. Cases will be shown by Mr. W. Cheyne, Mr. J. J. Clarke, Mr. A. Lawson, Mr. H. L. Lack, Dr. D. McKenzie, Dr. G. Carpenter, and Dr. L. Guthrie. Paper:—Dr. J. McCaw (Belfast): A Case of Tetanus Neonatorum Successfully Treated with Antitetanic Serum.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. G. Eastes: The Conclusions of the Anæsthetists' Committee of the British Medical Association.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Abraham: Skin Affections.

TUESDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Consultation. (Medical).

WEDNESDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. H. A. Jacobson: Consultation. (Surgical.)

LONDON THROAT HOSPITAL (204, Gt. Portland street, W.).—5 P.M. Mr. C. Wunkes: Examination of the Ear and Nose. (Post-graduate Course.)

NORTH LONDON DISTRICT METROPOLITAN COUNTIES BRANCH BRITISH MEDICAL ASSOCIATION (Royal Free Hospital, Gray's Inn-road, W.C.).—4.15 P.M. District Committee. 4.30 P.M. The Staff of the Hospital will show some interesting Cases. Paper:—Dr. G. A. Heron: Tuberculin Treatment.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Green: Demonstration of Cases in the Wards.

THE SANITARY INSTITUTE, (Parkes Museum, Margaret-street, W.).—8 P.M. Sessional Meeting. Discussion on the state of our Streets (opened by Mr. T. Blashill).

THURSDAY (14th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. D. Grant: Treatment of Malignant and Non-malignant Tumours of the Pharynx and Larynx.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Abercrombie: Medical Cases. (Post graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—3 P.M. Dr. H. Low: Class. Roentgen Rays. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: Physical Diagnosis.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Steward: Intussusception.

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration:—Dr. P. S. Abraham.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

ROYAL BRITISH NURSES' ASSOCIATION (10, Orchard-street, Oxford-street, W.).—5.30 P.M. Mrs. H. J. Tennant: Nurses and the Industrial Laws. (Sessional Lecture.)

FRIDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Tilley: Consultation. (Throat.)

ROYAL INSTITUTION OF GREAT BRITAIN.—9 P.M. The Right Rev. Monsignor G. Molloy: Electric Waves.

EDITORIAL NOTICES.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

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VOLUMES for the second half of the year 1900, bound in cloth, gilt lettered, price 18*s*., carriage extra.

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